Memo from the Editor

Christmas belongs to all of us. Unfortunately, in the last few years it has become a sort of glorified merchandising extravaganza. That is the reason why this issue of the American Milk Review has not gone in for a more exuberant expression of the so-called Christmas spirit. The real Christmas, the Christmas that matters, is a profoundly personal thing. It lives in the deep, mysterious recesses of the heart and mind where the great hopes of mankind lie, ever ready to respond to the ageless music of "peace on earth, good will toward men."

N.M.

American
MILK REVIEW

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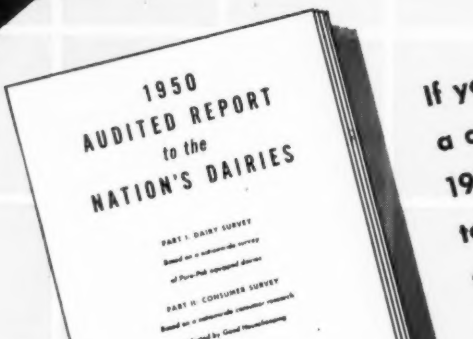

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NATION'S DAIRIES

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PART II: CONSUMER SURVEY

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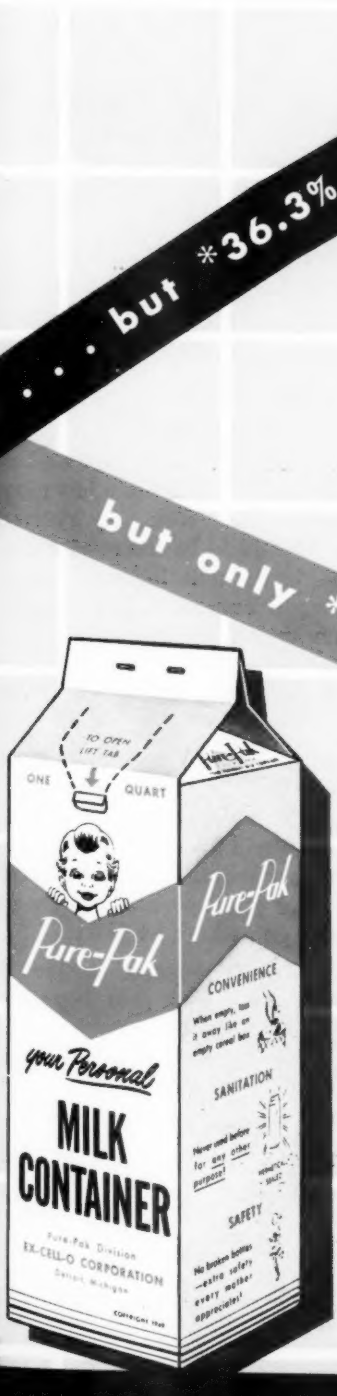

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Administration of the Pension Fund is in the hands of the Board of Trustees shown at left. The Board consists of ten labor representatives and ten management representatives. An actuarial firm has ben retained to advise on all phases of the plan.

The New York Market Develops

AN INDUSTRY-WIDE PENSION PLAN

By NORMAN MYRICK

Exclusive feature

While pension proposals for automobile and steel workmen were dominating the headlines a few months ago, the milk industry in New York City evolved a pension plan of its own. Said to be the most comprehensive pension system in the milk industry, the plan will provide the average employee with a sound pension of $130 a month. Retiring employees over age 65 with wives will average a monthly pension of $148 before July 1, 1952 and $170 per month after that date. This includes Social Security benefits.

In a period when health and insurance considerations as well as pension provisions are assuming increasing prominence in employee thinking the New York system offers valuable lessons. The liberal monthly returns are about as high as one will find in industry today. Steel and automobile employees settled on pensions of $100 to $125 with considerable satisfaction. Yet under the New York system pensions of $130 are average with some to go as high as $170.

The present system is the outgrowth of negotiations between 205 milk companies in the metropolitan New York area, bargaining on an industry-wide basis, and five local unions representing some 15,000 drivers and dairy plant employees. The metropolitan area includes parts of New Jersey, Connecticut and Long Island as well as New York City and Westchester County.

As a result of the bargaining between company and union representatives it was agreed that the milk companies would contribute ten cents an hour to a welfare and pension fund to be known and administered as the Milk Industry-Drivers and Dairy Employees Unions

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Crescent
Dairy Co.,
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This De Laval Cold Milk Separator

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2. **Daily costs of heating and cooling the milk, skimmilk and cream are also eliminated.**
3. **Labor time usually required to disassemble, wash and reassemble pipe lines to the heaters and coolers is eliminated.**

De Laval Cold Milk Separators are available in capacities of 1750, 3500, and 5500 lbs. of 40° milk per hour.

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Pension and Welfare Fund. Of the ten cents per hour per man four cents goes for welfare benefits and six cents goes for the pension. The ten cents an hour contribution began October 24, 1949, just about a year before the pension plan was ready to go into operation. During that period approximately $3,000,000 has been contributed to the fund, $1,200,000 to the welfare portion of the system and $1,800,000 to the pension phase. The welfare portion of the program went into effect April 1 of this year. It is estimated that more than $250,000 in hospitalization, disability, and death benefits have been paid out since that date. This welfare section of the plan provides each eligible employee with $2,500 worth of life insurance, $40 per week disability benefits, and hospitalization insurance for himself and family.

Income Must Equal Outgo

The building of a pension program is an exacting task. In the first place any system to be worth its salt must be what is termed "actuarily sound". This means that there must be enough money in the fund to meet the demands retiring employees will place upon it. There are many theories regarding how and at what time money to meet every pension must be available. This is a difficult question to answer and yet it can be answered. That is where the exhaustive studies made by actuaries, experienced in pension work, become necessary. The basic premise on which the pension operates is that both labor and management want to guarantee as much money as possible to the men who have put in 25 years of service and who have reached age 65. Obviously it is necessary to know how many employees will be retiring each year. Further it is necessary to know how long they may be expected to draw a pension. Will the average pension run for five years, ten years or how long? What is the life expectancy of a milk plant employee or a routeman after 65? These are important questions. There is a definite amount of money coming in each day. The question is how much will be going out? That depends on the number of pensioners and the number of expected pensioners.

In the case of the New York system or any system the first year it is in operation a certain number of employees will be eligible. The next year additional employees will become eligible and must be added to the group already drawing pensions. The third year probably a few of the pensioners will have died but new ones, numerically more than those who have died, will swell the number of pensions being paid. This process will go on until a leveling off point is reached, that is, a point where the number of pensioners added to the list each year is equalled by the number removed. When that point is reached it is a fairly simple matter to figure out the pension but building up to that point is an extremely tricky piece of business.

BOARD OF TRUSTEES

The Fund is administered by an equal number of employer and Union Trustees. The employer Trustees are Messrs. Patrick Casey, Dairymen's League Coop. Ass'n, Inc.; R. E. Crowley, Sheffield Farms Co.; Louis Garb, Puritan Dairy; Frohman Holland, Holland Farms; Fred Janssen, Janssen Dairy Corp.; Joseph Pickett, Borden's Farm Products; Ropert Popper, Dellwod Dairy Co.; Irving Wisch, Hegeman Farms Corp.; Alfred Sperber, Milk Handlers & Processors Ass'n; and Leonard H. Berger, of Independent Milk Marketers, Inc.

The Union Trustees are: Messrs. Fred A. Conrad and William F. Kennedy, Local 338; Frank Gallon and Joseph Trerotola, Local 607; Samuel S. Gelman and James W. Kerr, Local 602; Richard Keber and Lawrence W. McGinley, Local 680; Max Liebler and Cornelius O'Connell, Local 584.

Mis Antoinette Johnson is the Manager of the Fund whose offices are at 1860 Broadway, New York 23, New York.

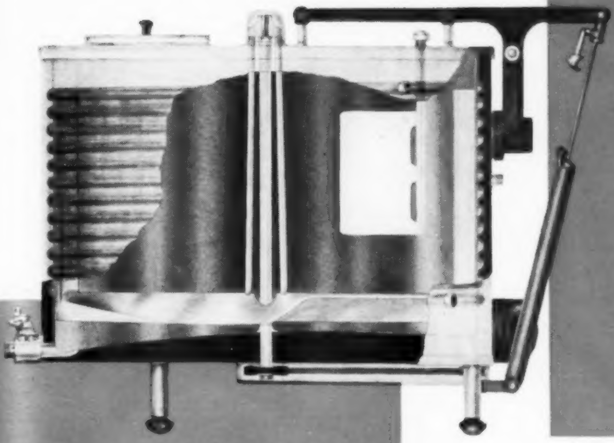
The administration of the pension plan is completely divorced from either labor or management. The authority for administration is vested entirely in the Board of Trustees.

Two things make this New York plan unique in the dairy industry. It provides the highest pensions of any plan for milk plant employes and drivers and it is the only industry-wide system in the industry.

The actuarial studies in the New York system were made by Martin E. Segal and Company. It was found that 41.5 per cent of the employees in the 205 companies involved were over age 50 and that 11.3 per cent were over age 60. On the basis of the information gathered the actuary estimates that 447 employees will be eligible for pensions within the next five years. Within the next ten years it is believed that 1114 employees will be eligible to draw pensions. With these facts as a guide coupled with life expectancy tables it was possible to calculate the amount of money that could be paid out as a pension to each individual. Fifty dollars a month to each employee was the figure that the studies revealed to be a sound estimate of what the pension fund will yield. The studies showed also that each employee will receive approximately eighty dollars a month from Social Security. Consequently the total average pension that each employee will receive amounts to about $130. The term "about" is used because actual experience will probably bring some revision in the amount of the pensions. According to the actuary this revision will probably be upward rather than downward inasmuch as the calculations are made on the conservative side.

Labor - Management Statement

Mr. Frohman Holland, Chairman of the Employers Group and Mr. David Kaplan, Chief Economist of the International Brotherhood of Teamsters, an American Federation of Labor organization, described the new system in a joint statement. "Our industry-wide pension program," they said, "will be administered by ten employer trustees representing the 205 milk companies and ten union trustees representing the five locals of the Teamsters Union, AFL party to the agreement. The plan is unique in many respects as compared with other industry-wide programs that have been developed through collective bargaining. For example, our plan will provide a flat $50 per month in addition to whatever the eligible employee will receive from Federal Social Security or any other pension system.



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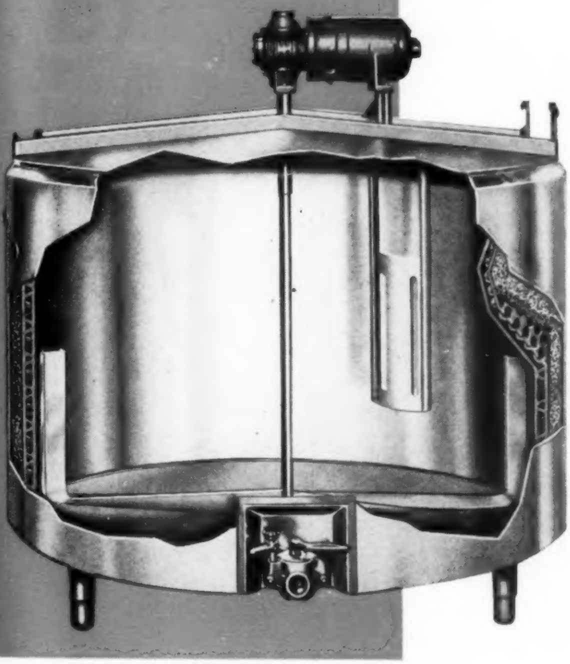
PFAUDLER PRESSURE PROCESS "LO-VATS"
Capacities 100, 200, 300 Gallons

PFAUDLER PRESSURE PROCESS VATS
500, 800, 1000 Gallons



If you process milk specialties, Pfaudler has the type of vat that gives you maximum processing flexibility along with high operating efficiency. In the smaller sizes—100, 200 and 300 gallons—the Pressure Process "Lo-Vat" meets all the requirements you may have for heating, holding, mixing or cooling. This is equally true of the larger Pressure Process vats of 500, 800 and 1000 gallons.

Common to both types is the new Pfaudler high pressure jacket construction. It is designed to permit heating with either steam or hot water. Fast cooling is obtained with chilled water. Also with Freon or ammonia but not alternately with steam. Thus, these vats are readily adapted to a variety of plant operating conditions, giving you flexibility from both the standpoint of product use and plant operation.

THOROUGH AGITATION. Both small and large Pressure Process vats provide thorough but gentle agitation of any milk product. This is accomplished with the new sweep type stainless steel agitator in combination with an adjustable baffle. In the smaller vats, the agitator is powered by a single speed bottom drive. Agitator is removable by simply lifting it off the center drive shaft—as on a washing machine. On the large vats, the agitator is operated from a 2-speed gear head motor mounted on a center frame. It is easily removed from the vat by a coupling release.

For detailed specifications on either or both types, use form below or see your Pfaudler Dairy Equipment Distributor.

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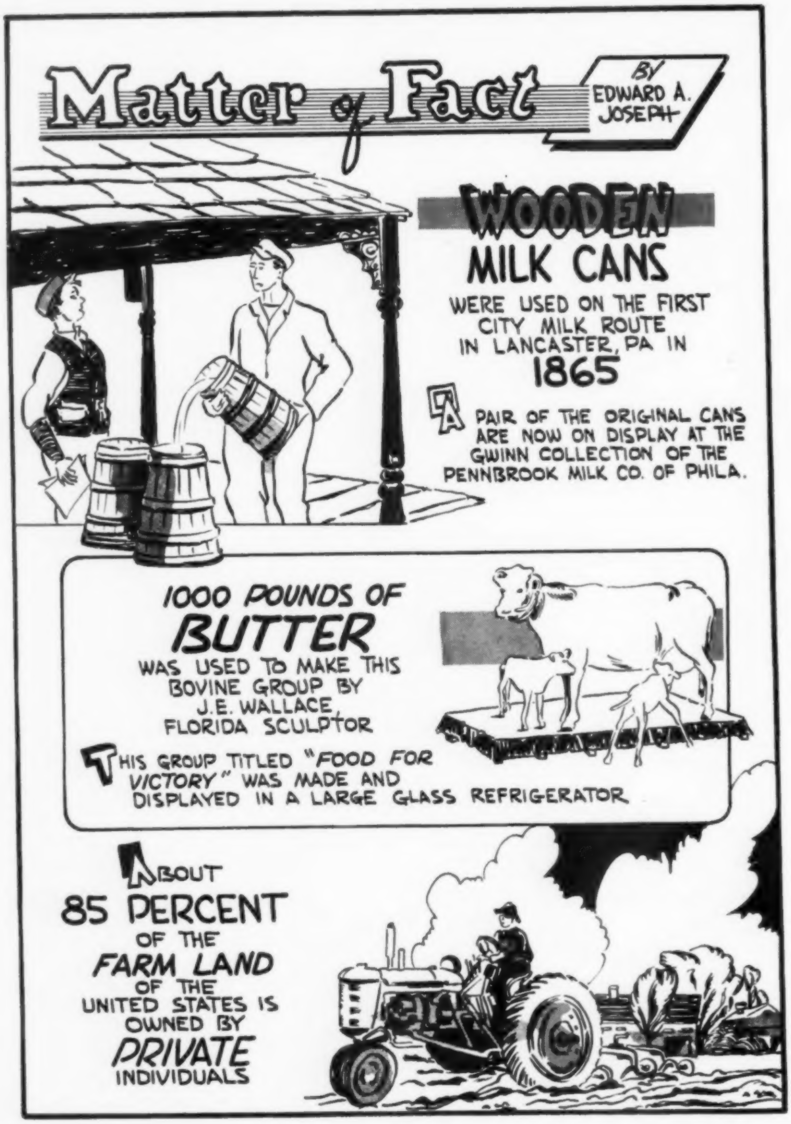

Matter of Fact
BY EDWARD A. JOSEPH
WOODEN MILK CANS
WERE USED ON THE FIRST CITY MILK ROUTE IN LANCASTER, PA IN 1865
A PAIR OF THE ORIGINAL CANS ARE NOW ON DISPLAY AT THE GWINN COLLECTION OF THE PENNBROOK MILK CO. OF PHILA.
1000 POUNDS OF BUTTER
WAS USED TO MAKE THIS BOVINE GROUP BY J.E. WALLACE, FLORIDA SCULPTOR
THIS GROUP TITLED "FOOD FOR VICTORY" WAS MADE AND DISPLAYED IN A LARGE GLASS REFRIGERATOR
ABOUT 85 PERCENT OF THE FARM LAND OF THE UNITED STATES IS OWNED BY PRIVATE INDIVIDUALS

This means that many of our retiring employees will receive total monthly pensions of $130 a month. The plan includes a total and permanent disability provision which gives totally disabled employees $50 per month after age 55 and 15 years of service in the industry.

"The pension plan will operate on an actuarially sound, self-insured basis so that the pensions of those who retire are fully guaranteed."

The big difference is that in other plans the employer supplies enough money to make Social Security plus the employer contribution equal an established figure. The New York proposal says the employer contribution will in effect provide $50 a month. This contribution plus whatever Social Security yields, it will probably be about $80 a month, will be the pension.

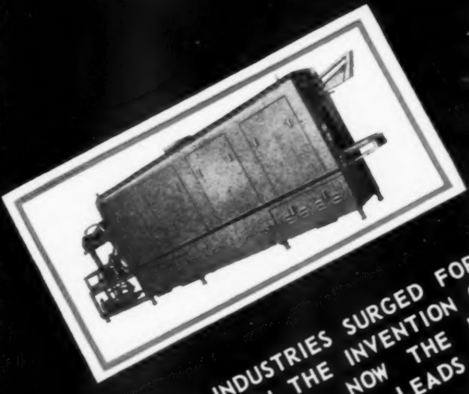
Many questions remain to be answered. For example, what constitutes 25 years of service has not yet been defined to the complete satisfaction of all concerned. Does a man work every day or can there be a break? If there can be a break how much of a break is allowable? Then there are the part time employees. To what extent is a man who works three days a week, or one a day week entitled to participate in the program. What about new employees? Suppose a man is hired when he is 55 years old. When he reaches 65 he has only ten years of service. How does he fit into the picture? One question that has been answered, however, is the retirement age. After July 1, 1952, retirement will be mandatory at age 68.

No Vested Pension Rights

The employee in this system has no vested pension rights. This means that the money contributed belongs to the fund and not the individual employee. If a man leaves the industry he cannot take his pension rights with him. In some plans, usually a plan where the employee contributes something from his salary, a credit is built up which has a cash value depending upon the amount of the employee contribution. Most teacher pension plans, for example, operate on this basis. If a teacher leaves the profession he may draw out in the form of cash the amount of his contribution plus interest. Since the New York system calls for a contribution by employers alone the employee does not have any claim on the fund except as he is eligible for a pension. A man can change employers within the industry in the area covered by the system but if he leaves the industry for some other form of employment he loses his pension rights. Presumably this will have a stabilizing effect on labor turnover. Men will be loath to move from one job to another if it means sacrificing their pensions.

The administrative features of the plan are established on what appears to be a firm foundation. The money will be paid into the fund by each employer. If an employer is remiss in his payments he has five days grace after which time he is considered to have violated the contract. In addition he is charged six per cent interest on the money he owes. The bank selected by the trustees as the depository of the money does not administer the funds, it merely acts as a depository.

The actual administration of the fund is in the hands of a Board of Trustees consisting of ten employer members and ten union members. The employer members of the Board of Trustees were selected by an employer bargaining committee. These selections were then confirmed by the 205 companies involved. The union members were selected by the union membership, each local choosing two members. However, running a milk



MANY INDUSTRIES SURGED FORWARD WITH THE INVENTION OF HYDRAULICS. NOW THE R.G. WRIGHT COMPANY LEADS THE MANUFACTURERS OF DAIRY EQUIPMENT INTO THE FIELD OF HYDRAULICS WITH THEIR COMPLETE LINE OF HYDRAULICALLY OPERATED STRAIGHTAWAY CAN WASHERS.

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SAFE TO OPERATE: AND
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TO YOU AND YOURS

R.G. WRIGHT Company Inc.

23 ROETZER STREET BUFFALO 11, NEW YORK

This is the Section of the Contract

1. A pension and welfare program shall be instituted which shall be financed by employer contributions of ten cents per straight-time hour actually paid for up to a maximum of forty hours per week and not to exceed 2,080 hours per work year.

2. The Employers make no commitment with respect to the level of benefits which shall be provided by the program, and the total expense to be incurred by the Employers with regard to the pension and welfare program shall be the ten cents per hour contribution specified above.

3. The allocation of the total ten cent contribution between the pension program and the welfare program shall be determined subsequently by the below-mentioned joint committee of the parties.

4. Employer contributions to the program shall accrue as of 4:00 P.M. October 24, 1949.

5. It is understood that the pension and welfare program contemplated by this agreement shall be a uniform program in which all employers subject to the agreement shall participate.

6. Employers who at 4:00 P.M. on October 24, 1949, had employee welfare or pension programs covering employees affected by this agreement, shall maintain such programs, with respect to such employees, until the new program contemplated by this agreement becomes operative, or until January 31, 1950, which ever date is earlier. Employers contributing to such presently operative programs shall not, prior to January 31, 1950, claim a credit, in the amount of such contributions, against the presently required ten cent contribution, unless a welfare or pension program becomes operative sooner. Should the new program not be in operation by January 31, 1950, the parties will discuss further arrangements regarding continuance of present programs and credit therefor.

7. Compulsory retirement, at an age later to be agreed upon, is recognized as an obligatory feature of the program. Exceptions to this rule may be made in instances wherein the employer and employee mutually agree to delay the retirement date. Consideration regarding deferred retirement shall also be given where a reasonably adequate retirement benefit is not available to the employee at the normal retirement age. In determining the adequacy of the retirement payments to an individual, Social Security benefits shall be included.

8. No program is to be instituted unless it qualifies for approval by the United States Treasury Department so that employer contributions to the program will be tax deductible.

9. Employers may not claim a reduction in the level of their contributions by virtue of future liberalization of the Federal Social Security program.

10. The problem of providing retirement benefits for individuals between October 25, 1949, and the effective date of the new program is recognized.

11. The welfare benefits under this program shall meet the requirements of state statutes, in the respective states affected, pertaining to the payment of weekly disability or sickness benefits. The Employers shall not be required to contribute to the support of programs required by such statutes in addition to the private program herein contemplated.

12. All expenses incidental to the institution, promulgation or administration of the pension and welfare program are to be paid out of the monies of said pension and welfare fund.

13. A Joint Committee of the Employers and the Union shall be established to formulate, within the framework of this agreement, the specific and detailed provisions of the pension and welfare program. In the event of inability of the Committee to

business or a labor union is one thing, running a pension plan is quite another. Both labor and management have recognized the need of professional advice in the administration of the plan and have retained the same firm, Martin Segal and Co., that did the acturial studies as advisors to the Boad of Trustees on all phases of the plan.

Precedents Must Be Made

There is little experience in industry-wide programs of this nature to guide the Board of Trustees. Theirs is a pioneering job in which they will have to feel their way and work out precedents as they go along. However, there seems to be a happy spirit of co-operation in existence that should enable the Board to find solutions to the problems that are bound to arise on an intelligent and mutually satisfactory basis.

The day to day clerical work involved in the two programs is handled through an independent office set up for that specific purpose. It is completely divorced from both labor and management.

As this piece is written the pension system is set up and stands ready to operate. Pension checks will be issued as soon as the plan receives the blessing of the Bureau of Internal Revenue. This is necessary because money contributed to a pension fund is a deductible business expense only if the program meets certin specified conditions. Once the income tax people are satisfied that this New York plan meets the required specifications the wheels will begin to turn.

The newness of industry-wide pension systems, the lack of precedents, makes it difficult to assess accurately the significance of this New York pension system. That it is a sound proposal and one that should work ap-

that Deals with the Pension Plan

agree upon matters necessary to the institution of the program, the disputed issue shall be decided through arbitration pursuant to the arbitration provisions of this agreement, the scope of such arbitration not to infringe upon the area of basic provisions herein agreed upon or change or modify such basic provisions.

14. (a) The employer shall, as soon as possible with due regard for bookkeeping necessities, but in any event no later than December 15, 1949, pay over to the depository hereinafter to be named all monies due from October 24, 1949, at 4:01 P.M. to and including the last payroll date in November, 1949. Until the Pension and Welfare Program provided for herein has been formally instituted, all monies hereafter due under the foregoing provisions shall be paid over monthly to the depository on the tenth (10th) day of each month covering all payrolls paid during the preceding calendar month.

(b) The depository shall be a bank or trust company which shall be mutually agreed upon prior to the date when the initial payments are to be made. The sole functions of said depository will be to receive and hold the monies deposited to the credit of the Pension and Welfare Program and to pay out said monies to the Pension and Welfare Program when it has been formally instituted. The depository shall make appropriate transfer of such monies, together with earned income, if any, to the uses and purposes of the Pension and Welfare Program when formally instituted upon the joint order of any two of the following persons, one of whom must be Frohman Holland or Robert Abelow of the employer group, and the other of whom must be David Kaplan or Samuel J. Cohen of the union group.

(c) The persons named hereinabove shall forthwith arrange the necessary clerical and record-keeping details incidental to the payments to be made to the Program, and all other details necessary to the prompt and orderly collection of the monies due.

(d) The failure of an employer to pay monies due under the Pension and Welfare Program shall be a violation of the collective bargaining agreement. Non-payment by an employer or employers of any monies now or hereafter due shall not relieve any other employer from his obligation to make the payments required hereunder. In addition to any other remedies to which the parties may be entitled, an employer in default for five (5) working days shall be obligated to pay six percent (6%) interest on the monies due to the Pension and Welfare Program from the date when payment was due to the date when payment is made. All monies due, together with interest as aforesaid, shall be deemed trust funds.

(e) In addition to any other enforcement remedies which may be provided therein, it is agreed that when the Pension and Welfare Program has been formally instituted, the trustees thereof shall be authorized and empowered to take whatever proceedings may be necessary for enforcement thereof, including any remedies which would be generally available to the parties for enforcement of the collective bargaining agreement.

15. The foregoing provisions of Temporary Schedule "F," which constitute a statement of the principles of the understanding and agreement of the parties with respect to the Pension and Welfare Program shall be superseded by a detailed written agreement covering the subject matter as soon as the same has been prepared. When completed, such detailed statement shall immediately be substituted for the foregoing, and thereafter shall constitute Schedule "F" of the collective bargaining contract.

pears to be a safe statement. In the larger areas of social philosophy there are bound to be differences of opinion until time demonstrates where the logic lies. There are those who hold that to be really sound a pension should involve contributions from the employee as well as from the employer. Other folks argue that the money is actually the employees' but instead of being in his pay envelope it is stored up for delivery in the form of a pension. The argument is supported by pointing to the contract. The pension is a part of the reward a workman receives for his services, the fact that it is included in a contract covering the terms of his employment proves it, they say.

Actually, debate on the question is probably more academic than anything else. The fact is that employers and employees have agreed that pensions are a legitimate employee aspiration. They have further agreed on a practical means of implementing the basic agreement. They have agreed on a means of financing the proposal and on a means of administering the fund thus created. They have recognized that revisions in the plan may be necessary and have made the plan subject to reconsideration when new contracts are negotiated. Perhaps the most encouraging aspect of the program, however, is the fact that in an extremely competitive business and in an area of high social pressures too often unaccompanied by an equivalent amount of logical thinking, the union people have shown a heartening amount of responsibility and the employers an enlightened outlook that does them credit. There is little question that the pioneering work which this industry-wide pension plan involves will have repercussions far beyond the banks of the Hudson.

XUM

SALES and SALESMEN

A Page for Sales Managers

Getting the Union Milkmen to Sell

By C. W. ESMOND
G. P. Gundlach & Co.

IT IS POSSIBLE to get union milkmen to do a selling job. True, there are a great many concerns who are not accomplishing much in this direction.

But there are enough of the opposite type of operation who are getting consistently good sales cooperation from union milkmen, to prove that it can be done when good business principles are applied.

This was brought home to us, recently, in a conference of milk distributors who operate in a market that is tightly controlled, union-wise. One man out of these six or seven operators is handling his sales force in much the same way as milk salesmen were handled in pre-union days.

In other words, he is making it interesting for them to sell by setting up rewards in proportion to effort. Also, and this is very important, he maintains a very human relationship with his men. The employees of this concern are a 'team', loyal to the team and enthusiastic for its success.

His men deliver loads of dairy products much larger than the average load in his market, and the individual income per man is much higher than the average income for other milkmen in the market.

Does it pay him to do this? His steady growth and his high credit standing demonstrate that it does. He mentions that in the beginning he bought up other small businesses and consolidated them with his own.

Now, however, he is paying his union route salesmen to build larger routes and compel him to put on additional routes, at a cost of only a fraction of what it cost him per unit for the business he bought from other operators.

"The American Milk Review" is proud to welcome a new authority to its pages. SALES AND SALESMEN, written by the staff of G. P. Gundlach & Co., well known exponents of the art of selling dairy products, will be a page devoted exclusively to problems of selling, merchandising and advertising. It will appear each month and will be written by men who know their business. Questions should be adressed to SALES AND SALESMEN, G. P. Gundlach & Co., 1201 West 8th St., Cincinnati 3, Ohio.

Another concern, nationally famous, operating in another market that is tightly unionized, has been working along similar lines for some years. The policy has been productive and profitable.

The union contract yielded the driver a base wage of $11.80 per day for delivering 350 points. This meant he was being paid 3.37c per point. When he got above 350 points, he received only 2c per point.

They set out to get their routes up to over 400 points, and I believe they now average considerably above that figure.

They took into consideration the fact that it costs $5.00 or more per day to operate a truck, and this figure remains fairly constant whether the truck delivers 350 points, or 500 points, or even 600 points.

Taking all factors into consideration, they found that the per-point cost for delivering milk under the union contract was the aforesaid 3.37c for 350-point routes; 3.2c per point for 400-point routes; 2.96c per point for 500-point routes; 2.8c per point for 600-point routes.

The daily truck cost per point goes down from 1.43c for a 350-point route to .83c for a 600-point route. The combined wage and truck cost goes down from 4.8c per point for a 350-point route to 3.63c per point for a 600-point route.

The management of this concern takes the view that this saving in delivery cost, as the daily average deliveries increase in size, should be shared with the men who build up and maintain high average point sales.

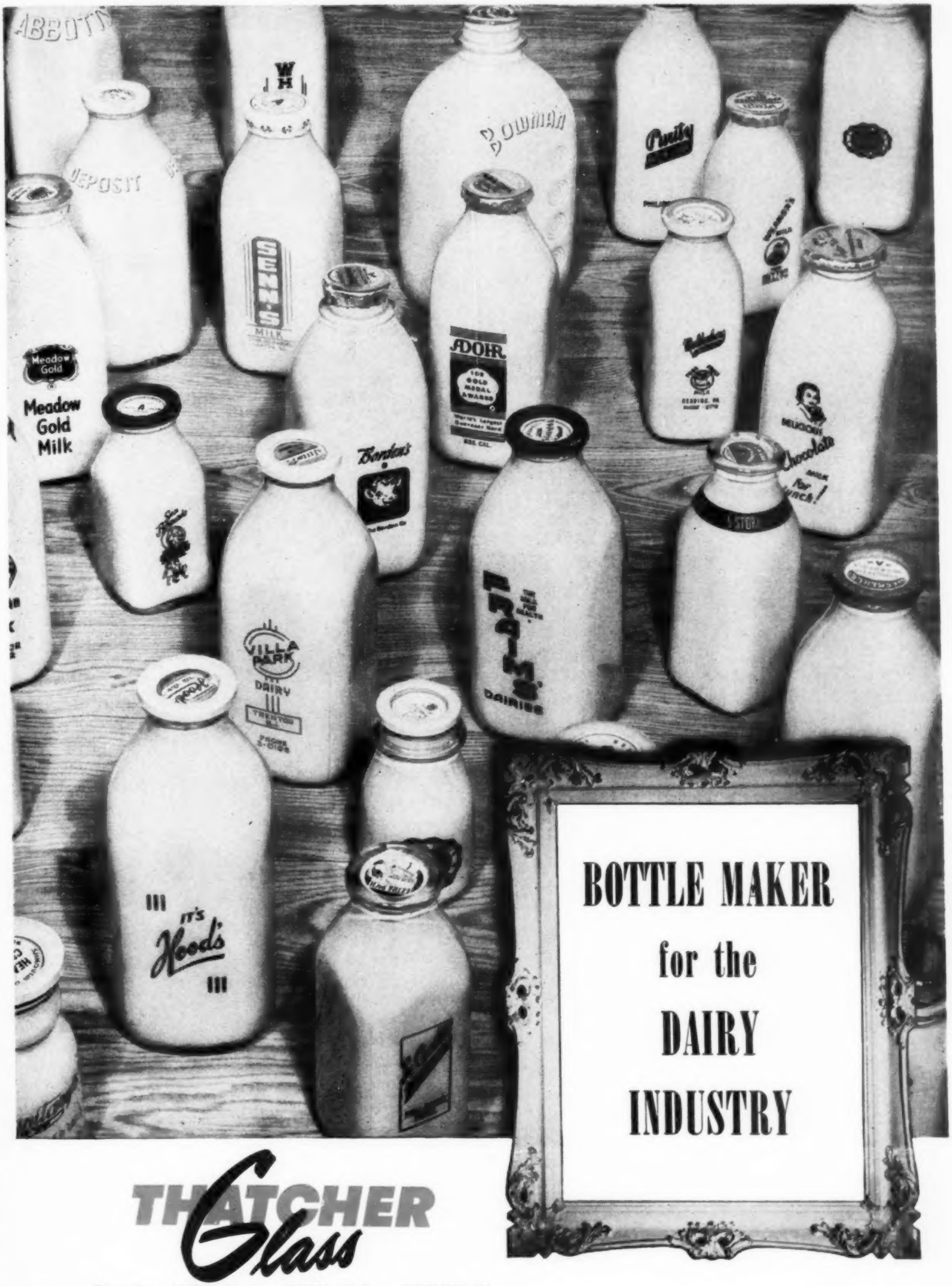
They are making it especially interesting for the route salesman to maintain an average of over 480 points and are now paying 4c per point for averages above 480.

In dollars and cents, the man who maintains a 600-point average will earn almost $2,000.00 per year more than the man who maintains a 400-point average.

Does the milkman normally keep himself in the high earning bracket mainly on the sale of fluid milk? It may be that he does, in some cases. But, in our observation, it is done mostly with a combination of milk and by-products such as buttermilk, cream and cottage cheese.

This is especially true of the operator first mentioned. He is constantly building up his sales of by-products. The excellence of these by-products and the general effect of his

(Please turn to Page 71)


ABBOTT'S
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XUM

From this small counter, about 18 feet long, which can be handled by one man, a steady stream of customers carry out their own orders. Everything from fistfulls of ice cream cones to banana splits goes over the bar.

ICE CREAM
FOUNTAIN SERV

Plenty of parking space in front of the Knudsen Brothers Dairy invites the passing motorist to stop for ice cream. Originally installed for $5,000, this corner milk bar is now doing an $80,000 a year business.

THE MILK BAR PAYS ITS WAY

By ELIZABETH FAGG

Paper Cup and Container Institute

BACK IN 1932, in the dark days of the depression, the three brothers Knudsen, managed by considerable scrounging to pool the princely sum of $800. With this they opened a dairy in New Haven, Conn. Their milk was rich and good and they prospered. Soon they had such an abundance of business that they sold their cows and became milk distributors only, buying from other producers in the area.

But the spectre of surpluses arose. Since they purchased the full production of their dairy farmer sources, they accumulated more milk in periods of high production than they needed. This was bad for profits. So the brothers resourcefully opened a milk bar in one corner of the dairy, making it as economical a unit as possible. It was installed for around $5,000. An 18-by-30 foot space staffed by two employees, operating entirely on paper service, and open from 1 untll 10 p.m., it began doing a land office business. Knudsen's ice cream became as popular as Knudsen's milk. People drove for miles and miles to eat the rich ice cream sodas, milk shakes, chocolate fudge sundaes at the nine-stool bar or to carry these things away packed in cartons.

Today the brothers Knudsen are doing a $80,000-a-year business from this milk bar alone. This, of course, is only a fraction of the total dairy operation which involves handling some 25,000 quarts of milk daily, running a fleet of 70 delivery trucks, and the operation today of not one but three milk bars. The Knudsen plant, with the various expansions added through the years, is today one-hundred fold larger than the original unit. The 1932 dairy was not as large, in fact, as the plant refrigerator is today, Mr. Christ Knudsen, President points out with a laugh.

Small Retail Outlets

Milk bars are invaluable to the dairy distributor as a year-round business stabilizer, he says. An alternative road to profitably utilize surplus cream and milk, he says, is to go into the wholesale ice cream business. But in his experience the establishment of small retail outlets for surplus products is a better course.

"But I don't believe in doing both," he says. If you sell ice cream wholesale to drug stores, then open a soda-fountain of your own, you become a competitor to your own customers. We'd rather stick to either one or the other, and we've found, in our part of the world at least, plenty of business in the retail set-up."

Of Knudsen's three bars, the one first established is doing the biggest business. Location may have something to do with this. The glassed-in corner unit was designed into the new modern brick dairy constructed in 1940. Situated on the Hartford Turnpike, eight miles north of New Haven, the dairy and its bar have all the advantages of a highway drive-in location. The surrounding area though essentially rural is dotted with innumerable small communities.

Plenty of parking space in front of the dairy, with signs announcing the dairy and bar in full view on the highway, invites the driver to stop. The turnpike is not a major thoroughfare, but a secondary roadway through pleasant countryside. Much of the business therefore is from persons driving to Knudsen's specifically to eat ice cream.

"It gives them someplace to go for a little ride," Mr. Knudsen says.

Why we Advertise regularly in the American Milk Review

"Since Baker Box became a division of Connohio, we have more than doubled our advertising space in AMERICAN MILK REVIEW.

"We are firm believers in the value of regular advertising and will continue to use AMERICAN MILK REVIEW which we have found to be a most effective advertising medium."

R. L. BIGGERSTAFF
Vice-President
Baker Box, Division of Connohio, Inc.

AMERICAN MILK REVIEW . . .
CERTIFIED CIRCULATION
OVER 16,000 MILK PLANTS,
OWNERS, EXECUTIVES, PURCHASING AGENTS AND
PLANT SUPERINTENDENTS...

American
MILK REVIEW

KITCHEN FOUNTAIN SODA DRINK

Delicious easy-to-prepare-and-serve Kitchen Fountain Sodas provide new home refreshment lures for young and old.

Mothers and home hostesses are fascinated by their quick ability to demonstrate their "KFS" finesse.

The recipe as outlined by G. P. Gundlach, dairy products consultant who has pioneered many popular flavors of ice cream, is simple:

1. Pour the fluid of any favored available soft drink into a 15-ounce glass or tumbler to half-full
2. Add two large spoons of ice cream.
3. Insert an ordinary soda straw.
4. Relax and sip.

The cheerful, immaculate bar, with a composition-top black and yellow fountain unit which has 9 stools, three black and red tables seating 12 (giving a total seating capacity of only 21), does a big sit-down business.

But the take-out business from the "bulk" counter at one end is twice as large. From this brief counter, about 18 feet long, handled by one man, a steady stream of customers carry out their own merchandise – everything from fistfulls of ice cream cones to banana splits. Some sit and eat in their cars, others drive away. Knudsen's has no idea what total numbers of unit sales are at the bulk counter because practically every ring-up on the cash register represents anywhere from two to five or six customers.

This immense bulk volume in such a small space is possible because of the self-service system (zoning regulations of the area prohibit curb-service waiters), and because of the use of paper cups and containers, Mr. Knudsen says. The bulk counter is equipped with every size and variety of round nested container, with tops, from the small single service five-ounce cups for individual portions of ice cream or sundaes, to be eaten in the car, to larger paper cups for milkshakes. Large orders go out in half-gallon containers for dessert uses in the home up to 2½ gallon tubs for parties. These large units are kept ready-packed in the freezers to be handed out instantly. But everything else is packed to order.

During April, May and June when milk production is up as much as 30 percent Knudsen separates the surplus milk, condenses the skim (at a concentration of three to one), which is then frozen. When periods of low milk production arrive, this is taken out and used to manufacture ice cream. Its ice cream runs 14½ percent fat content.

DAIRY OUTLOOK FOR '51

Michigan State College agricultural economists think the outlook for milk production in 1951 is good, what with a rise in demand faster than the rise in dairy product supplies. Total milk production in the year ahead will be about the same as for 1950, but dairy product prices will be slightly higher.

A favorable factor in the dairy outlook is the fats and oils situation. Edible vegetable oils production will be lower with reduced cottonseed and peanut production more than offsetting increased soybean production. Higher fats and oils prices will bolster butter and other dairy prices.

Many farmers who have switched to marketing cream off the farm in recent years are expected to go back to selling milk in 1951. Less butter will be produced as demand for other dairy products expands. Continued high consumer incomes will result in a greater proportion of milk used for fluid purposes.

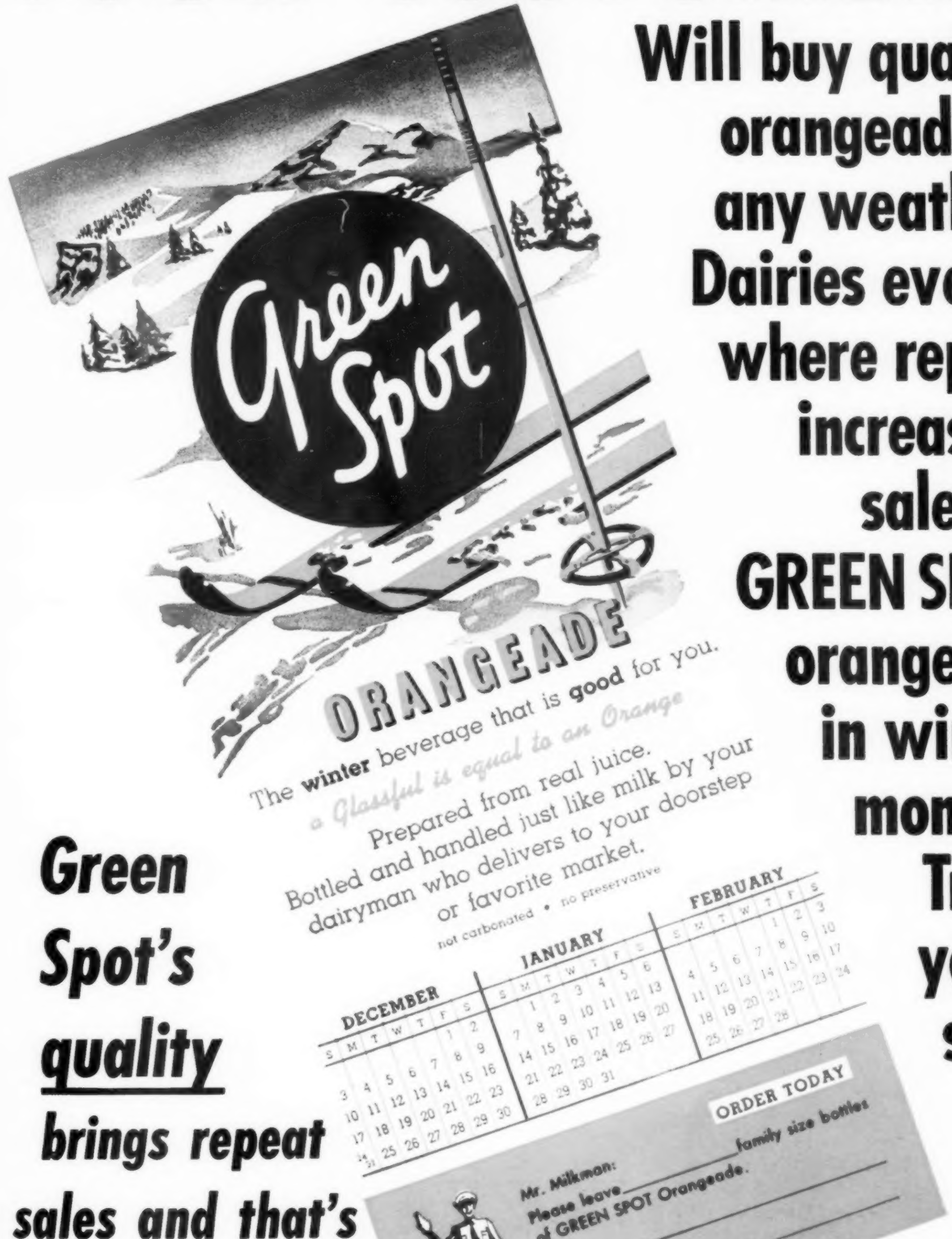
An appetizing range of choices, posted on the wall behind the counters of the bar, features some nine kinds of sundaes, six ice cream sodas, and usually 10 flavors of ice cream. The flavors shift somewhat from week to week. Sundaes are the most popular item at the service counter, with sodas, and milk shakes running a close second. Ice cream is the big seller over at the bulk bar. Nothing more is offered here – no weiners, sandwiches or coffee – except the Knudsen's cheeses which come both in cartons and in jars.

At Knudsen's other two bars, however, a variety of quick lunch items are served along with milk products. Kndsen says these are in urban areas unlike the bar on the Hartford Turnpike so have much larger fountain seating capacities. They're ¾ milk bars, and ¼ quick lunch. One, located in Darby (20 miles from the dairy) was established in July, 1949, while the last was opened in May, 1950, in East Haven, a suburb of about 20,000 population seven miles in the other direction. The Darby bar did around $70,000 during its first year.

Knudsen's Dairy believes that the Milk bar is a superlatively profitable solution to surplus milk. High-quality milk products merchandised through attractive retail outlets, notable for impeccable cleanliness, they say, can also build goodwill for their dairy's main product, which is bottled milk.

YOUR CUSTOMERS

Will buy quality orangeade in any weather. Dairies everywhere report increasing sales of GREEN SPOT orangeade in winter months. Try it yourself!



ORANGEADE

The **winter** beverage that is **good** for you.

a Glassful is equal to an Orange

Prepared from real juice.
Bottled and handled just like milk by your dairyman who delivers to your doorstep or favorite market.

not carbonated • no preservative

DECEMBER

S	M	T	W	T	F	S
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17	18	19	20	21	22	23
24/31	25	26	27	28	29	30

JANUARY

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FEBRUARY

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ORDER TODAY

Mr. Milkman:
Please leave ________ family size bottles of GREEN SPOT Orangeade.
Name ________
Address ________

Green Spot's quality brings repeat sales and that's where you profit, Mr. Dairyman!

THESE ATTRACTIVE WINTER BOTTLE HANGERS WILL HELP YOU SELL!

GREEN SPOT INC., LOS ANGELES

If you want to go places in a hurry
Dacro
GCS
DACRO DAIRIES INCORPORATED
Dacro
America's fastest growing milk cap!

SINGLE CAPPING OPERATION!

No dairy plant operator has to be told how the simplicity of single capping affects bottling costs. It saves time . . . saves the cost of extra caps or cover devices . . . saves the cost of extra equipment needed to put them on the bottle. With Dacro P-38, capping is fast, simple and efficient . . . a combination you can't beat for saving money.

SMALL SIZE CAP— LOWER CAP COST!

The 38 mm. size bottle cap is the answer to higher costs of materials. Because Dacro P-38 is smaller, it takes less material to make and sells at a lower price. You save on cap costs and at the same time get the same satisfactory filling and pouring as the larger sizes give.

...get aboard DACRO P-38

Let others have their old fashioned flying carpets . . . or even flying saucers. If you want to go places in a hurry, join the hundreds of dairy plant operators who are riding high with Dacro P-38.

This is the cap that has revolutionized milk bottling. It's the first cap to be made in the economical 38 mm. size. It's a one-piece cover cap . . . applied in a single capping operation. There's just nothing like it for production efficiency and economy.

Every day you put off getting the whole Dacro P-38 story is putting you another day away from bigger bottling profits that could be yours. Your letter or wire will bring our representative with facts and figures that you'll be glad you listened to. There is no cost or obligation.

HIGH CAPPING EFFICIENCY AT HIGH SPEED!

There's no need to nurse your filler along when you're using Dacro P-38. Open it up wide and let it run. Dacro will cap the bottles as fast as you can fill them . . . and with fewer stops and delays than with any other cover cap. We have stop watch studies that support this record and will be glad to show them to you.

YOUR CUSTOMERS WILL LIKE IT!

Dacro capped bottles make money for you even after they leave your dairy. We know, because we've seen how pleased housewives are with Dacro in cities and towns all over the country. They like it because it's so easy to remove . . . but best of all they like the way it re-seals the bottle. Dacro P-38 holds its shape. There's no crumpling or crushing. It can be snapped back on the bottle time after time.

First with single capping operation!

First with small 38 mm. cap!

CROWN CORK & SEAL COMPANY

Dacro Division BALTIMORE 3, MD.

XUM

How
SOLVAY Cleanser No. 600
TRADE-MARK REG. U.S. PAT. OFF.
Makes Dairy Cleaning
EASIER—MORE EFFECTIVE

More Thorough Cleaning

Faster Action

Less Labor

Greater Safety

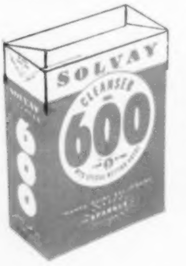
Added Versatility

Less Cost

YOU WILL AGREE that cleaning jobs in the dairy are specialized jobs which call for a specialized cleanser. SOLVAY CLEANSER NO. 600 was designed specifically for difficult dairy cleaning operations . . . such as you encounter every day in your work as a dairyman.

IT WORKS FASTER The moment you start the cleaning job, the exclusive combination of wetting agent and other properties goes right to work. It penetrates the dirt; gets under it; loosens it; emulsifies it—lifts it off the surface! It wets the soil; breaks it into minute particles; suspends it so it can be easily carried off in the rinsing operation!

IT MAKES CLEANING EASIER SOLVAY CLEANSER NO. 600 is fortified with multiple action to attack stubborn, sticky soils from the top as well as from underneath. Special ingredients give this power-packed cleanser unusual strength . . . help lessen your cleaning job. It's safe, too—"600" will not harmfully affect the skin or the surface being cleaned. Use it on painted surfaces, nickel, tin, chrome, tiling, glassware, or practically anything in the dairy!



THE RESULT . . . equipment is left sweet, bacteria count extremely low—the two most important factors in dairy cleansing. SOLVAY CLEANSER NO. 600 is available for immediate delivery in convenient packages to suit your particular needs—5, 115 and 250-pound packages. Order today from the nearest SOLVAY office.

SOLVAY CLEANSER No. 600

SOLVAY SALES DIVISION
ALLIED CHEMICAL & DYE CORPORATION
40 Rector Street, New York 6, N. Y.

BRANCH SALES OFFICES:
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U. S. Patent 2404280

Joyous
Greetings
for the
Holidays

American MILK REVIEW

AN URNER-BARRY PUBLICATION

XUM

The place to keep money is in the bank, says the author of this fascinating article on the ways of the punch and blow boys.

Safe or Shoebox?

By ROSS C. PARR

Exclusive feature

How much money do you have in that office safe? Twenty dollars? Two hundred? Two thousand? If so, will it be there in the morning? Are you taking reasonable precautions to see you'll keep it after you've earned it? Probably you're like most operators in the dairy business, and thus are fair game for the lads in the Jimmy Valentine racket.

Safe cracking is a big business. Pick up the newspaper any day and you'll read a story about a safe job in your own hometown, or in Texas, New York, or California. A rule of thumb prediction is that a community will have one safe cracking attempt a year for each thousand persons in the city. Probably 20 per cent of the tries will be successful, with about 10 per cent classed by police as "professional jobs."

But having your safe blown is like getting a broken arm; it won't happen to you until suddenly you come out of the anesthetic with your arm in splints.

Many dealers refuse to admit two basic principles: most safes, especially the ancient ones, are chiefly repositories to protect valuable papers against fires; a bank is the best place for money. They'll point to an old fashion, four-ton safe and boast, "That's safe enough." An expert punch and blow boy will say, "I can blow that shoebox in 17 minutes." And he'll do it.

The average business man calls in designing experts to plan, construct, and decorate his new outlet, and then plunks the week's receipts into a 20-year-old safe. And it is on week-ends and the night before holidays the tool kit lads like to drop in for a visit.

Lookout for Lightweights

Then there's the other dealer who reads the advertisements about lightweight magnesium steel safes, and has one trucked to his office. Rather than have the new unit anchored in concrete, he relies on the strength of the steel. A week later a smart yegg pops into the establishment, trucks the safe out again, and takes it to some deserted area to engage in a leisurely opening operation.

ABOUT THE AUTHOR

Mr. Parr writes "this piece was written after an acquaintance lost several hundred dollars in a safe job. Although I am now writing for trade magazines, I offer as qualification for this yarn several years' experience in newspaper work on police beats. If you question the accuracy of any portion of the story, I suggest you have it checked by the burglary detail of the police force."

Experts vary in their opinions whether there is such a thing as a burglar-proof safe, but they all agree a few precautions on the part of business men would cut drastically the yearly loss to cracksmen.

You are the man they mean. And what can you do about it? First, keep your money in the bank! After that comes a variety of suggestions, chief of which is selection of a decent safe.

Safe makers are way ahead of the thugs. Recently developed metals are extremely difficult to drill or cut with acetylene torches, but anchoring a lightweight model in concrete is all important. One type safe has a removable combination dial which plugs into the door. Since a standard procedure in looting ancient models is to knock the combination from the door and then swing it open, the cracksman often goes blank when confronted with the blank face of the removable combination safe.

In fact many detectives on the burglary detail now opine that the repository presenting the toughest problem to foot pads is a cylindrical safe about twenty inches in diameter and three

(Please Turn to Page 75)

Set Your Cap for GREATER PROFITS

with SMITH-LEE

CELLOPHANE HOODS

Double **Protection with** *Double* **Sales Appeal!**

TAMPER PROOF

Want more income, bigger routes, greater profits? Then take a tip from big national advertisers and promotion-minded dairies. Change to Cellophane packaging. There's PROOF everywhere that Cellophane is doing today's smartest selling job in the field of food packaging.

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BIG NATIONAL ADVERTISERS,
CELLOPHANE HOODS CAN DO FOR YOU!

Cellophane tops off your bottles with freshness and protection that your customers can see! Give those customers the *double protection* of a cap and a hood PLUS a *double reason* to buy from you. The extra "Sell" in Cellophane is bound to show up in your sales.

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ONE ROLL HOODS 10,000 BOTTLES

FREE: **to Cellophane Hood Dairies · Newspaper Mats · Radio and Television Spots plus Sales Promotion Guide.** ***Write for Full Information!***

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HOODS
PACKAGE YOUR MILK FOR GREATER PROFITS
CAP HEADQUARTERS
SMITH-LEE CO., INC. ONEIDA, N. Y.

W. R. DANGELMAYER

JOB INTERVIEWS CAN BE PAINLESS

By WINTON R. DANGELMAYER

Winton R. Dangelmayer, the author of this article on job interviews, is Employment Manager for the New England Telephone and Telegraph Company in the Greater Boston area. The problem of securing the proper people for the work to be done is a common businesss denominator. Whether a man is in communications or food processing, textiles or steel, the great questions of human relationships are constant. Mr. Dangelmayer speaks as a telephone man but his observations apply to the milk business as well as the switchboard.- You'll find what he has to say worth reading.

RECENTLY a young lady appeared in our office to apply for work. She filled out her application form and was introduced to one of our interviewers. It was apparent to the interviewer that the applicant was nervous. She just couldn't sit still. Her hands kept moving and she didn't seem to be able to find any place to put them. She had difficulty in getting her voice to say what she wanted to say.

During the early part of the discussion, she was asked the question, "Are you nervous?" The spontaneous response was, "Nervous! I'm scared to death."

Most of us at some time during our life take the step of applying for a job. It's a pretty important event. In fact, so important to us as individuals that it is natural to be nervous. Many men who apply for work end up by staying with one organization all their lives. With the girls, life tenure is not usually a part of their ambition, but in many instances they will work a period of years for one firm and meet their husbands-to-be while on the job.

We all want to put our best foot forward when we apply for work. Yet few of us appear at our best when we are nervous. Are there ways of overcoming this handicap?

Company employment people realize that applicants are nervous and take many steps to relieve the tension. The offices are usually equipped with comfortable furniture, magazines are supplied, and frequently a trained receptionist is available. Privacy is provided for the interview. The interviewers themselves are carefuly selected and thoroughly trained. In choosing employment office personnel, traits such as tact, friendliness, courtesy, appearance, and the ability to establish rapport are considered highly important requirements.

But no matter how many steps and preparations are made by companies, applicants are still nervous. If all applicants knew and understood the viewpoint of the employment interviewer, it is possible that nervous tension might be reduced and the applicant would be in a better position to sell his or her qualifications. I think it would be well worthwhile for prospective applicants to survey the employment interviewer's job.

The job of employment interviewer is important and carries considerable responsibility. The future of any business depends to a large degree on the choices made by the interviewer. Any business, large or small, is simply the organized effort of the people who work for that business.

Suppose Roles Were Reversed

Perhaps the best way to analyze the job is to ask yourself how you would handle the position. What are the basic objectives you would have in mind? Can you think of any additions to the following list?

1. You would plan not only to place the applicant at ease as soon as possible but to continue the discussion under a relaxed atmosphere.

2. You would want to obtain as much useful information about the applicant as you could, and you would want to give as much information as is necessary regarding the company and the jobs.

3. You would not want to take any more of the applicant's time than is necessary.

CLEAN your CASES AT LOW COST!

Bright clean cases every day at the lowest possible cost . . . that's what you want for your dairy. That's just what you get with a

GIRTON EMPTY CASE AND BOX WASHER

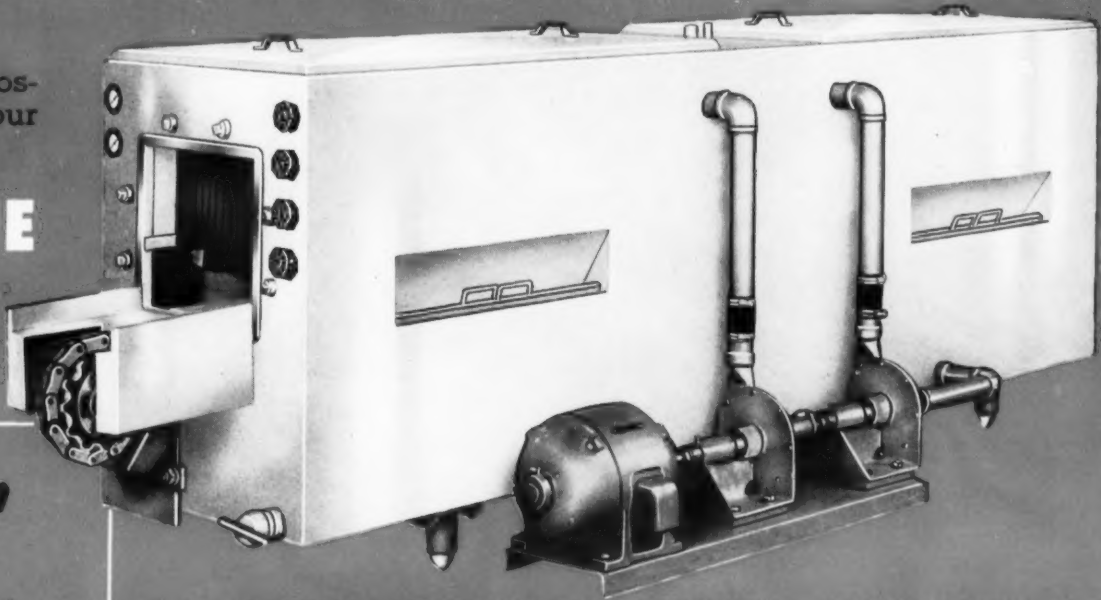
Here's why you get Clean Cases at Lower Cost

55 pressure jets spray a large volume of hot solution over every square inch of the case—inside and outside . . . then 55 more pressure jets spray rinse water over the whole case again . . . and out they come, sparkling clean and bright.

No mechanical gadgets to create problems . . . no complicated pipe arrangements . . . BUT sound engineering design that does the most effective case cleaning job at the lowest cost.

WRITE FOR BULLETIN

GIRTON MANUFACTURING COMPANY
• MILLVILLE, PA.



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Adler's Quality Milk, Inc.
Bronx, New York

Amherst Farms Dairy, Inc.
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Annette's Dairy
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Bodker Dairy
Detroit, Mich.

Borden Co.
Phoenix, Ariz.

Borden Co.
Houston, Texas

Borden Mfg. Products Division
Modesto, Calif.

Bordens Dairy
Tampa, Fla.

Borden Farm Products
New York, N. Y.

Borden Company
New York, N. Y.

Chestnut Farms
Washington, D. C.

Curles Neck Dairy, Inc.
Richmond, Virginia

Enfield Dairy
Ellensburg, Wash.

Ewing Von Allmen Dairy
Louisville, Ky.

Foremost Dairies, Inc.
Jacksonville, Fla.

Gannon's Dairy, Inc.
St. Clair, Mich.

Golden State Co., Ltd.
San Francisco, Calif.

Grocers' Co-operative Dairy, Inc.
Dayton, Ohio

High Grade Dairy
Seattle, Wash.

Howe's Dairy
York, Pa.

Jackson Dairy Farm, Inc.
Waterville, Maine

Jersey Creamery
Detroit, Mich.

Jersey Gold Creameries
Shreveport, La.

Keystone Dairy
Reading, Pa.

Lindale Dairy Corp.
High Point, N. C.

Mid-City Dairy Company
Chicago, Illinois

Mississippi State College
State College, Miss.

Pet Milk Company
St. Louis, Mo.

Ponce de Leon Dairy
Atlanta, Ga.

Ranch Department
Puunene, Maui, T. H.

Sheffield Farms Co.
Bronx, N. Y.

Sheffield Farms Co.
Brooklyn, N. Y.

Sheffield Farms Co.
Richmond Hill, N. Y.

Stearns Dairy Company
Denver, Colo.

Stedland Jersey Farms
Memphis, Tenn.

Sylvan Seal Milk, Inc.
Philadelphia, Pa.

Telling-Belle Vernon Co.
Cleveland, Ohio

THE MOST WANTED DAIRY EQUIPMENT

4. You would want to reach a fair and just decision regarding qualifications. In other words, you would want to be sure that you have given the applicant every opportunity to show you all qualifications and that you have thoroughly compared those qualifications with the requirements of the job. If you were unable to offer a position, you still would want to have the applicant leave encouraged.

5. You would want the applicant to like you and your company whether or not a job is offered.

If you accept these five general principles, you have next to decide how you are going to conduct your interviews so you will best meet your objectives.

Just how would you go about making the applicant feel at ease? One of your first steps has already been mentioned. You would want to arrange for privacy. You would also want to make sure that the applicant is not kept waiting, since a long wait would tend to increase nervousness.

The introduction to the interview quite frequently sets the tone and merits careful thought. The approach chosen might vary with your appraisal of the applicant and with your own personality as interviewer. Perhaps you would want to allow a little time for the applicant to adjust herself to the surroundings. This can be accomplished by discussing some unimportant item such as the weather or by simply asking the applicant to wait while you study the application. One introduction frequently used is to ask the applicant why she chose your company as the firm for which she wants to work.

You would do best as an interviewer if you would be yourself. You would want to be natural, friendly, and considerate. You would want to give your entire attention to the applicant.

What Information Is Needed

Your second objective deals with the information you are going to obtain and the information you are going to give. Just what information do you as an interviewer think you would want to develop? If you have already asked the reason for requesting work with your company, you have attained some useful information. From your powers of observation you have reached a decision regarding appearance, weight, height, etc. You will also want to know something regarding such items as courtesy, attitude, education, intelligence, and dependability.

NEW STANDBY PLANT

The Muskegon (Mich.) Milk Producers Association now has a standby plant to be ready in spring where surplus milk will be turned into manufactured channels during times of a glutted market, according to Frank E. Haas, association manager. "Perhaps it will operate one month a year turning milk into butter and powdered milk, and perhaps 12 months a year."

Dairies of the Muskegon Milk Distributors Association sell surplus above fluid milk requirements to manufacturing plants. Producers get a lower rate of return on surplus milk. At times the surplus is greater than the manufacturing plants can handle. The dairies continue to take it, but producers get 50 cents less than the going manufacturers' price.

It is this situation the producers are seeking to remedy through establishment of a standby plant. Milk going through the association's standby plant will be paid for at the going rate for manufacturing milk.

Cost of the plant was $100,000, and it is being financed through a revolving fund set up last January. Three cents a hundred is deducted from each member's monthly payment, and the 8th year he gets back the sum he paid in the 1st year, and so on.

Any profits from marketing the products will go into a reserve fund. Capacity of the standby plant is 70,000 to 80,000 pounds.

Many of these characteristics will be displayed if you can encourage the applicant to talk in a normal manner. Possibly the educational background is a good channel of approach. You can comment on the courses, the marks obtained, the absence and tardiness situation or the special skills that have been studied. Some applicants might prefer to talk about the extra curricular activities such as sports, drama, and debating.

Once the conversation is started, you as interviewer can learn only if you listen. So, you would want to encourage the applicant to continue talking with such comments as, "That's interesting," "Tell me more," or, "I see what you mean." There are any number of approaches that will encourage the applicant to chat. Other subjects, for example, might be previous work experience, ambitions, etc.

After some minutes of conversation you will begin to form an opinion regarding the personality. The opinion you have formed is very apt to be quite definite but it is only through experience that you as an interviewer can place confidence in the opinion formed.

After you have obtained sufficient information, you would next plan to discuss job opportunities within your company. You will want to cover the many advantages and inform your applicant just how her qualifications would fit for one or several jobs. The possibilities of future opportunities would be developed also. You would want to be enthusiastic and to sell your company and the job by using the facts you know.

Now, how about this desire not to take any more of the applicant's time than is necessary. You don't mean that you want to rush the applicant. It's simply that you as an interviewer will bear in mind that the applicant's time is valuable and you do not want to keep him or her any longer than is necessary. For example, if during the early part of the interview you find that a certin quality which is required is lacking, then you would want to explain the situation at that time rather than to continue the discussion.

Anyone applying for a job naturally feels that she must give the impression that her time is completely yours. Actually many applicants have planned to file applications the same day with other firms, they may be on their lunch hour or they may be pressed for time in other respects. The job of finding work is important and the applicant's time is valuable.

To Hire or Not to Hire

The fourth objective, as has been stated, is that you want to reach a fair

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you get these
5 Way Savings
with UNITED STEEL
milk cases

HERE'S A DAIRY THAT DID!

White Ice Cream and Milk Company of Wilmington, N. C. delivers milk to both consumers and wholesale accounts in 30 refrigerated trucks at temperatures well under 40 degrees. Cases of milk are loaded directly into the trucks as they come off the bottling line to save intermediate handling. In using United Steel Cases, there are no wood barriers to retard the cooling process and the milk is cooled quickly and economically in the truck.

① **YOU SAVE INITIAL AND REPLACEMENT COSTS**
Many dairymen have found they spend less than half as much for cases over a 10-year period using United Steel Wire Cases. You save, first, with a lower initial cost. You save, too, in replacement costs as these tough, welded-steel wire cases won't rot or burn.

② **YOU SAVE COOLING TIME**
Users find their milk, placed in cooling rooms, cools in 1/3 the time in United Steel Cases. There is less material to cool. Your compressor runs less and your power bills are greatly reduced.

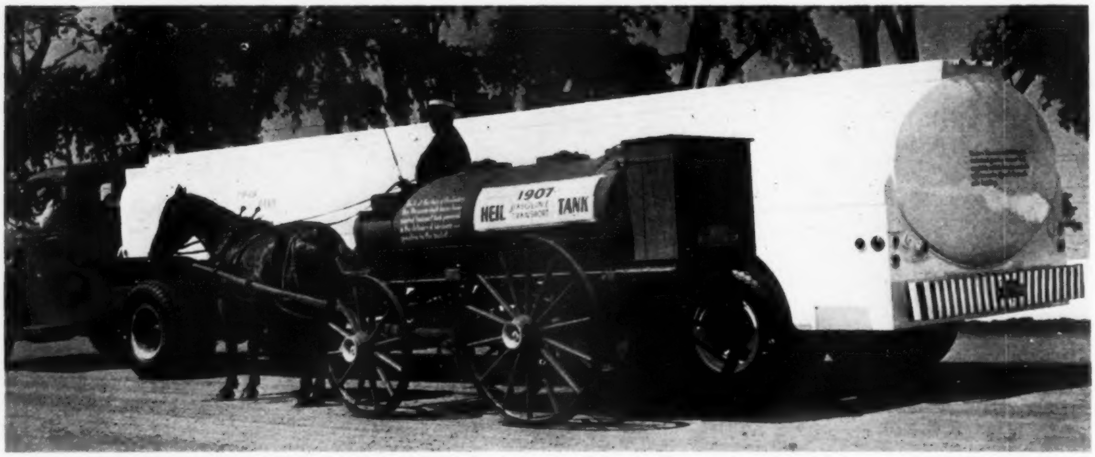
③ **YOU SAVE FLOOR SPACE**
United Steel Cases take less room in the plant, cooler room or truck—relieve crowded conditions to increase the efficiency of workers.

④ **YOU SAVE STORAGE AND HANDLING COSTS**
United Steel Milk Cases are so lightweight and easy to handle, they save many hours daily in handling time. They reduce worker fatigue and improve employee relations.

⑤ **YOU SAVE CUSTOMER TEMPERS**
Your customers are not embarrassed by clinging refuse and dirty bottles when you use these cleaner cases. There are no cracks or crevices to collect filth and bacteria. They will not hibernate cockroaches and other vermin.

Whether you use round or square glass bottles or paper cartons, there is a United Steel Case for all types and sizes that will give you these five-way savings. Write today for full details.

UNITED
STEEL AND WIRE COMPANY
137 Fonda Avenue, BATTLE CREEK, MICHIGAN
Manufacturers of Crates . . . Carriers . . . Icing Trays . . . Ice Cream Equipment



Tank trucks, as symbols of heroic stature of the dairy industry as well as magnificent mechanical creations, have intrigued us for some. Last month we published a page of pictures contrasting the advertising use made of tank trucks by other industries with the use made of them in the dairy industry. This month we show you another contrast, one that exemplifies the tremendous advances that industry has made in less than fifty years. The huge tank truck that dwarfs the horse drawn gasoline transport of 1907 is as far removed from its prototype as the modern milk business is removed from the can and dipper. This picture was made available through the courtesy of the Heil Company.

and just decision. This sounds like a pretty simple step. Let's stop and think a minute. Think of some friend that you have known a long time and ask yourself if you would hire her as an office clerk. You probably will have little trouble in reaching a decision. Now think of some girl you were introduced to recently and with whom you talked for one-half or three-quarters of an hour. Would you hire her as an office clerk? I'm sure you will find this second decision more difficult to make.

Most companies have written statements to describe the specific qualifications desired in new employees. These statements are called job specifications and you as interviewer would find them very useful. With experience, as has been mentioned before, your decisions regarding the choices for employment improve.

In general, what are the qualifications you are going to analyze? To simplify the question somewhat let's say you are interviewing for a clerical position in an office. The duties include typing, answering the telephone for others, maintaining certain office records, compiling reports, and processing customer orders.

Your company has given you the job requirements as follows:

*High school diploma
*At least 16 years of age
Neat, legible handwriting
Good appearance
Pleasant, friendly voice
*Typing accurately at least 45 words per minute
Liking for clerical detail
*Accuracy combined with speed
Ability to express herself well
Adaptability to varied tasks
Sense of responsibility
Ability to get along well with others.

The starred items are a matter of record or will be determnied by pre-employment tests. The other items you as interviewer determine. The handwriting you see on the application form. The appearance and the voice you study as you interview.

The other items—liking for clerical detail, ability to express herself well, adaptability to varied tasks, sense of responsibility, ability to get along well with others—call for real analysis work. Just how would you decide that your applicant would like clerical detail? Some will tell you they don't like clerical detail, which gives you your answer. With others you will form your opinion from a variety of approaches. For example, a carefully written application form may be an indication. A discussion of school subjects liked or disliked may help. A complete description of the clerical work involved may develop a reaction.

How do you determine that the applicant expresses herself well? Here's a trait where nervousness could easily mislead you. You must be sure you have given the applicant a chance to display her ability, that you have allowed her to talk and that you have listened attentively. Before you make your decision, you want to feel that the applicant has told you about some subject or experience that she knows thoroughly and that she enjoyed relating to you.

Can Adaptability Be Measured

Adaptability to varied tasks is important on any job. It provides a flexible force and frequently will influence promotional opportunities. How can you as interviewer measure it? You can't accurately, but you can gather material to help you form the correct opinion. One indication might be the variety of interests the applicant has followed in school. Other suggestions may come from previous work experience, hobbies, or marks obtained in school. Many firms give aptitude or interest tests as an aid in determining whether the applicant is adaptable.

There are many developmental questions which will help you reach a decision regarding adaptability. You might ask, for example, if the applicant prefers to work alone or work with a group and why. Or you could ask if the preference is for one particu-

(Please turn to Page 74)

XUM

Where in the world is...

Christmas?

Where there are free nations,
there are people who know
the happiness of Christmastime.
This Christmas we join with you
in looking to that inevitable day
when *all* people will be free to know
the heritage of Christmas.

the men & women
of Cherry-Burrell

Let's Talk Accounting

By JIM KLUGER

QUESTION NO. 1 — We recently suffered a fire loss in our plant amounting to $4,000. We insure our equipment for $10,000 against fire and it seems to us therefore, that the insurance company should have paid us the full $4,000. They only paid us $3,600 and said we didn't carry enough under our coinsurance clause. What does that mean? Aren't we entitled to the full amount of the loss?

ANSWER NO. 1–The coinsurance clause in your fire policy means simply that you agree to insure your properties for a certain percentage of their actual value. It's usually 80%. If you don't carry the required amount, the insurance carrier is obligated to pay you for losses only in the proportion that the amount actualy carried bears to the required amount. That's where the "coinsurance" comes in. The insurance carrier and yourself are really coinsurers of the property under the circumstances. In your case, with a coinsurance clause requiring that you carry 80% of the actual value of your properties, the figures would be:

(A) Property worth	$13,900.00
(B) Required to carry (80%)	11,120.00
(C) Insurance actually carried	10,000.00
(D) Percent of (C) to (B)	90%
(E) Loss suffered	4,000.00
(F) Recoverable from carrier—90%	3,600.00

The reason for the coinsurance clause is that rarely is a 100% loss ever suffered. If the restrictive clause were omitted, and the losses payable in full up to the amount of the policy, there would be a tendency to underinsure property, and the result would be to penalize those who did carry enough insurance to the benefit of those who underinsure.

Jim Kluger, specialist in dairy accounting, conducts his exclusive column in the "American Milk Review" each month. If you have an accounting problem or simply an accounting question write to Mr. Kluger at Kapleau, Kluger & Company, 1414 South Penn Square, Philadelphia, Pa. He'll do his best to give you the straight dope.

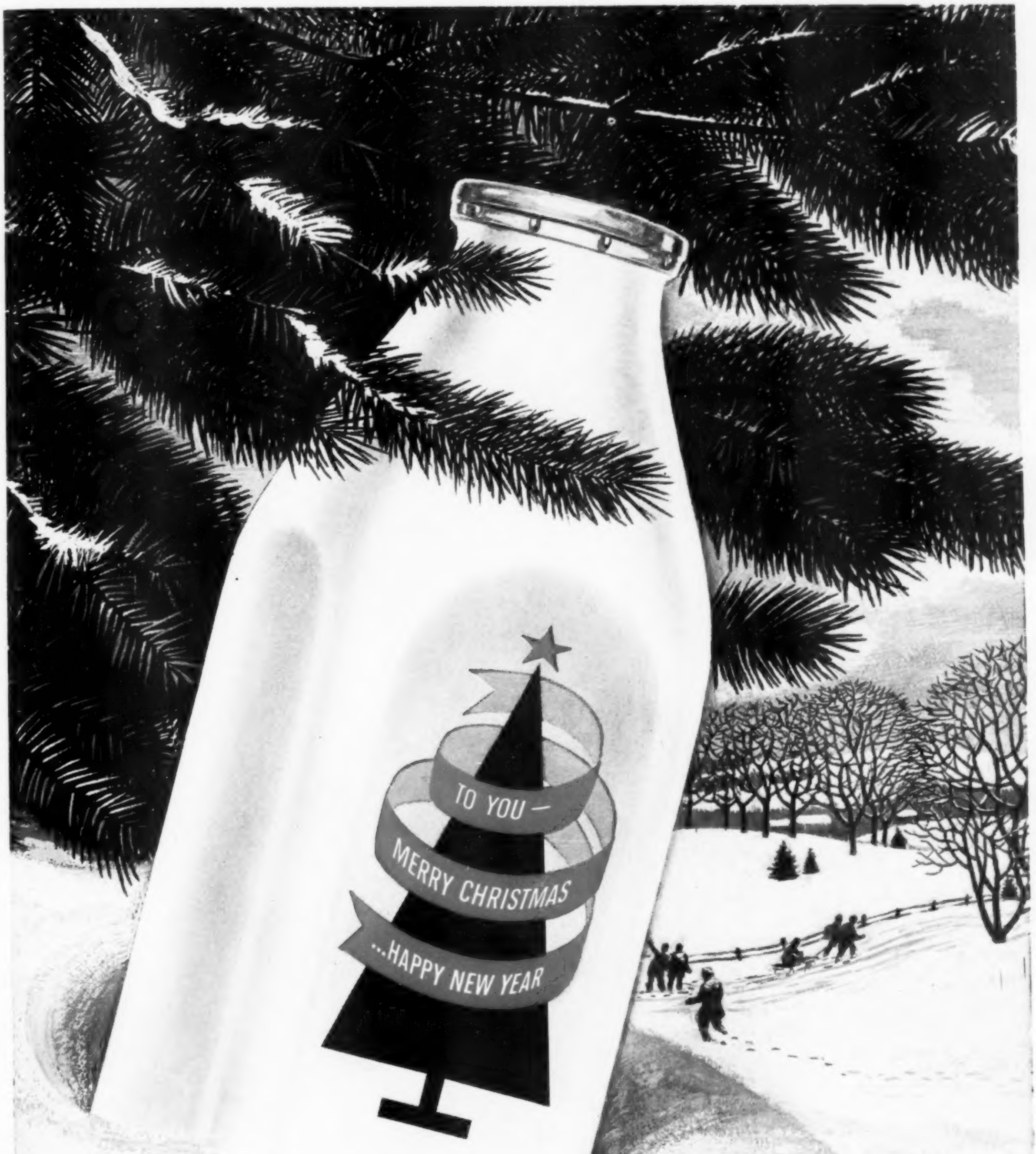
QUESTION NO. 2 — A number of correspondents have requested me to recommend a bookkeeping system for a fluid milk dealer. Systems building is something that should be tailored to the requirements of the individual, but I will attempt to outline a basic system for a small fluid milk dealer around which individual superstructures may be built.

(Continued from last month)

ANSWER NO. 2–As it has been determined just what is required in the way of financial statements, their form and content, we must now set up the accounts needed to accumulate that information in the ledgers. The accounts–titles and numbers–are formalized by means of a "chart of accounts," illustrated in figure IV. The account numbers are an aid in posting and entering, as will be seen later on.

The numerical system is so arranged as to permit almost unlimited expansion, extensively and intensively. For example, "accounts receivable routes" is numbered account No. 112. If it were desired to break this down into retail and wholesale routes, they would be numbered 112.1 and 112.2 respectively. All the other accounts may be expanded *intensively* in like manner. The groupings on the chart are significant. It may be seen, for example, that numbers 101 through 109 are reserved for cash accounts. Numbers 111 through 119 are for receivables. Numbers 121 through 129 are for inventories. Numbers 131 through 135 are for prepaid expenses. The group numbers 136 through 139 are unassigned. Numbers 141 through 149 are for fixed assets. Reserves for depreciation are numbered the same as the asset account, with the letter R suffixed, as 144R for "reserve for depreciation – delivery trucks." The group 151 through 159 are unassigned. Liabilities start with number 161, and, together with the proprietary accounts, run through number 199. The 200 group is reserved for income accounts, and 301 on up for expenses.

The numbers do not run consecutively, and these blanks, together with the unassigned groups, permit of more expansion extensively than will probably ever be necessary. The most needed extensive expansion is likely to be in the operating expense group. The natural expense accounts in this basic chart run through number 30. The *extensive* limit is 99, more than


TO YOU —
MERRY CHRISTMAS
...HAPPY NEW YEAR

From all of us in the Dairy Container Division of the Owens-Illinois Glass Company, Toledo, Ohio

XUM

three times as many as are in the basic chart, and many more than will ever be needed under most conceivable circumstances. For intensive expansion, the expense accounts can be broken down ad infinitum. For example, social security taxes are number 21. Those taxes on plant labor would be numbered 421. If it were desired to segregate federal old age benefits taxes, federal unemployment insurance taxes, and state unemployment insurance taxes, they would be numbered 421.1, 421.2, and 421.3, respectively. In setting up the expense accounts, each natural expense account is combined with its functional designation. Advertising, a selling expense, is number 501 (500 for selling expenses, 1 for advertising expense). Bottles, a processing expense, is number 402. Professional fees, usually a general expense, is number 613. Many expenses, such as depreciation, repairs and maintenance, labor, supplies, social security taxes, fall into all three functional categories, and they are set up under all three. Depreciation expense for processing equipment is thus account No. 405. For delivery trucks, a selling expense, it is No. 505. For office equipment, a general expense, it is 605. Washing and cleaning powders, a processing supplies expense, is number 419. Office supplies, a general expense, is number 619, and so on. The reasons for and the advantages of this functional segregation are discussed at some length in the July "American Milk Review."

(To be continued)

Illustrative Chart of Accounts

Figure IV

Assets, Liabilities, Capital	*No.*
Cash in bank	101
Cash on hand	102
Accounts receivable routes	112
Accounts receivable dealers	115
Accounts receivable others	117
Reserve for bad debts	119R
Inventory products and materials	121
Inventory of supplies	122
Inventory of bottles	123
Inventory of cans and cases	124
Prepaid licenses and permits	131
Prepaid insurance	132
Prepaid taxes	133
Land	141
Buildings	142
Processing equipment	143
Delivery equipment—trucks	144
Office equipment and furniture	145
Depreciation reserves, etc	142R
Accounts payable farmers	161
Accounts payable trade creditor	162
Accounts payable payroll	163
Notes payable	167
Income taxes withheld	175
Old Age Benefit Taxes withheld	176
Social Security Taxes Accrued	185
Mortgage payable	191
Proprietary Capital Account	196
Drawing Account or, for corporation	197
Capital Stock Authorized	195
Capital Stock Unissued	194
Earned Surplus	196
Treasury Stock	199
Profit and Loss Current Account	198
Provision for Income Taxes	197
Sales	201
Hauling Income	210

Expense Accounts	*No.*
Products Cost of Sales	301
Processing Expenses	400
Selling and Delivery Expenses	500
Office and General Expenses	600

Natural Expense Accounts	
Advertising	1
Bottles	2
Cans and cases	3
Dues, subscriptions	4
Depreciation	5
Freight inward	6
Gas, oil, grease	7
Ice	8
Insurance	9
Interest on indebtedness	10
Wages, salaries, commissions	11
Laundry and uniforms	12
Professional fees	13
Postage	14
Licenses and permits	15
Power, light, water	16
Rents	17
Repairs and maintenance	18
Non-packaging supplies	19
Packaging supplies (caps, etc.)	20
Social Security taxes	21
Other taxes, except income	22
Telephone	23
Tires and tubes	24
Testing and laboratory	25
Travel and entertainment	26
Donations	27
Bank charges	28
Bad debts	29
Shortages	30

LOWER COST

ECON-O-SEAL closures cost less per 1,000—cost less to ship, handle and store.

LOWER COST

ECON-O-SEAL feeding and capping equipment costs less to buy, install and maintain.

LOWER COST

ECON-O-SEAL operation eliminates plug-capping, reduces breakage, cuts man-hour costs.

TURN AND LIFT
ALUMINUM
ECON-O-SEAL
CLOSURES
ECON-O-SEAL CO. • INDIANAPOLIS, IND.
ECON-O-SEAL
(Now available in 38MM size, too)

The Trend is to— **PRINTED ALL-ALUMINUM CLOSURES**

WASHINGTON REPORTER

By CAMPBELL

IS AMERICAN ENTERPRISE, as we know it, about to be eclipsed by a wartime economy? While it could be anyone's guess, it is apparent that Washington officialdom is definitely worried.

Right now, Government leaders hesitate to express their personal opinions. After all, this is an election year, but they indicate that soon after elections, things are going to happen and happen fast. While this might be the usual flutter of the bureaucratic mind faced with an emergency, there are many warning signs.

Spokesmen of the Defense Department have been telling editors and businessmen's associations that the emergency might last for ten or more years, and in all probability grow progressively worse before it gets better.

Brig. General Gordon R. Young told the Washington Board of Trade that we are entering a permanent era of crisis. Defense plans being set up "must go on, and on, and on; perhaps for years, perhaps for the entire lifetime of all of us."

America must adapt itself to "a permanent state of crisis—to live a normal life, with the permanent thought in the background of its mind that we may be attacked by a strong army that threatens our existence.

* * *

WILL BUSINESS controls be imposed and how stringent will they be? Probably this is one of the leading questions in everyone's mind.

Despite the reluctance of Congress and Administration leaders to adopt price and wage controls, there is every indication that they are definitely on the way. One thing sure, every effort will be made to avoid the early mistakes of the Office of Price Administration. For this reason, they may not be imposed immediately, though a definite start will probably be made right after election.

The Federal Trade Commission has provided Dr. Alan Valentine with figures showing profits of manufacturers during the second quarter of 1950 were at a postwar peak. Congressional offices report an intense interest upon the part of constituents.

Administration officials, when they talk for publication, offer doubt of the necessity for early action. Secretary of Agriculture Brannan thinks that "next Spring may tell the story" whether controls are needed to halt food price inflation.

"What happens from now on until early next year will determine the extent to which we must be faced with controls to prevent food price inflation. February and March may tell the story."

Economic Mobilizer W. Stuart Symington feels that much of the worry about controls could be eased, "if we could get over the psychology of scare buying."

Other top men assert that the "matter is under study," that we ought to try other things first such as fiscal, credit and debt management devices. But the Washington newsman gets the distinct impression that controls are inevitable, that they will be put into effect sooner than optimistic statements of the leaders would indicate, that they'll be drastic in some ways, and that they probably will last a long, long time.

* * *

IF A SALES TAX is established on a national basis, it is quite possible that food and clothing will be exempted for practical political reasons.

First new tax to go into effect will be the excess profits tax on corporations which is expected to be imposed in 1951, with a retroactive feature to the last part of 1950. Next tax measure that will probably be considered will be either a general sales tax, applied on the manufacturers or the retailer's level (or both) . . . or a transactions tax to be paid on all sales.

The transaction tax is something new to America though used in France. This is a pyramiding tax, even more obviously so than other tax measures. Each time an article or any component changed hands, the tax would apply. By the time it reached the consumer it could have been taxed ten or more times.

This form of tax was first proposed by the advocates of the Townsend Pension Plan, who estimate that it would bring in six or seven billion dollars annually. Treasury experts are not keen about the idea, but Congressmen may be.

Another tax proposal is to extend the excess profits tax idea to individuals and unincorporated business.

Whatever form it takes, added taxes are on the way for as Secretary Snyder has said: "Defense expenditures must be paid for as we go. It will require a substantial increase in taxes next year . . . a greater increase than most people realize."

"We can't live forever with a farm program that keeps meat, milk, dairy and poultry products stored in caves away from the people." The statement of a political foe of the present administration in Washington, you'd judge?

Well hardly, it is almost a direct administration attack on the Agricultural Act of 1949 by a political stalwart, Albert P. Loveland, until recently President Truman's No. 2 agricultural advisor. That is what has made Washington sit up and take notice.

"Supporting the prices of perishables worked during the war," he ex-

(Please Turn to Page 74)

installation after installation
proves the superiority of

HENSZEY *Multiple Effect*
EVAPORATORS

HENSZEY exclusive features provide:

- Lowest total overall costs.
- Increased plant capacity and efficiency with reduced labor load.
- 99.98% recovery of milk solids.
- Savings of up to 70% of steam and 72% of water requirements.
- Space saving compactness often increases capacity of plant without major building alterations.
- All parts quickly and easily accessible.
- Absolute sanitation. Entire unit thoroughly cleaned in one simple operation.

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HENSZEY COMPANY
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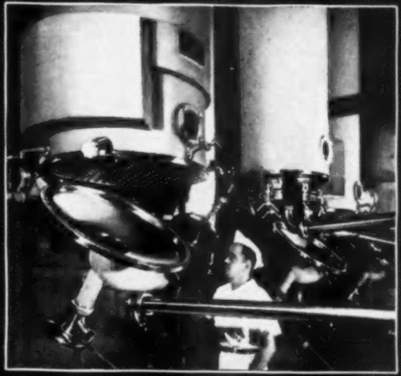
ABOVE: Large Three-Effect Henszey Evaporator pre-condensing milk for milk powder production. 32,000 pounds per hour to 40% TS.

BELOW: Bottom doors of installation open showing accessibility and visibility of "straight through" surfaces.



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U. S. ELECTRICAL MOTORS INC.
Los Angeles 54, Calif., or Milford, Conn. AMR
Send Sanitary Motor Bulletin
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Company__________
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YOU SHOULD BE IN PICTURES

By EUGENE A. CONKLIN

DURING RECENT MONTHS milk plants have experimented with both motion pictures and television in an attempt to increase milk plant volume of business. Here are just a few of the methods they are currently utilizing.

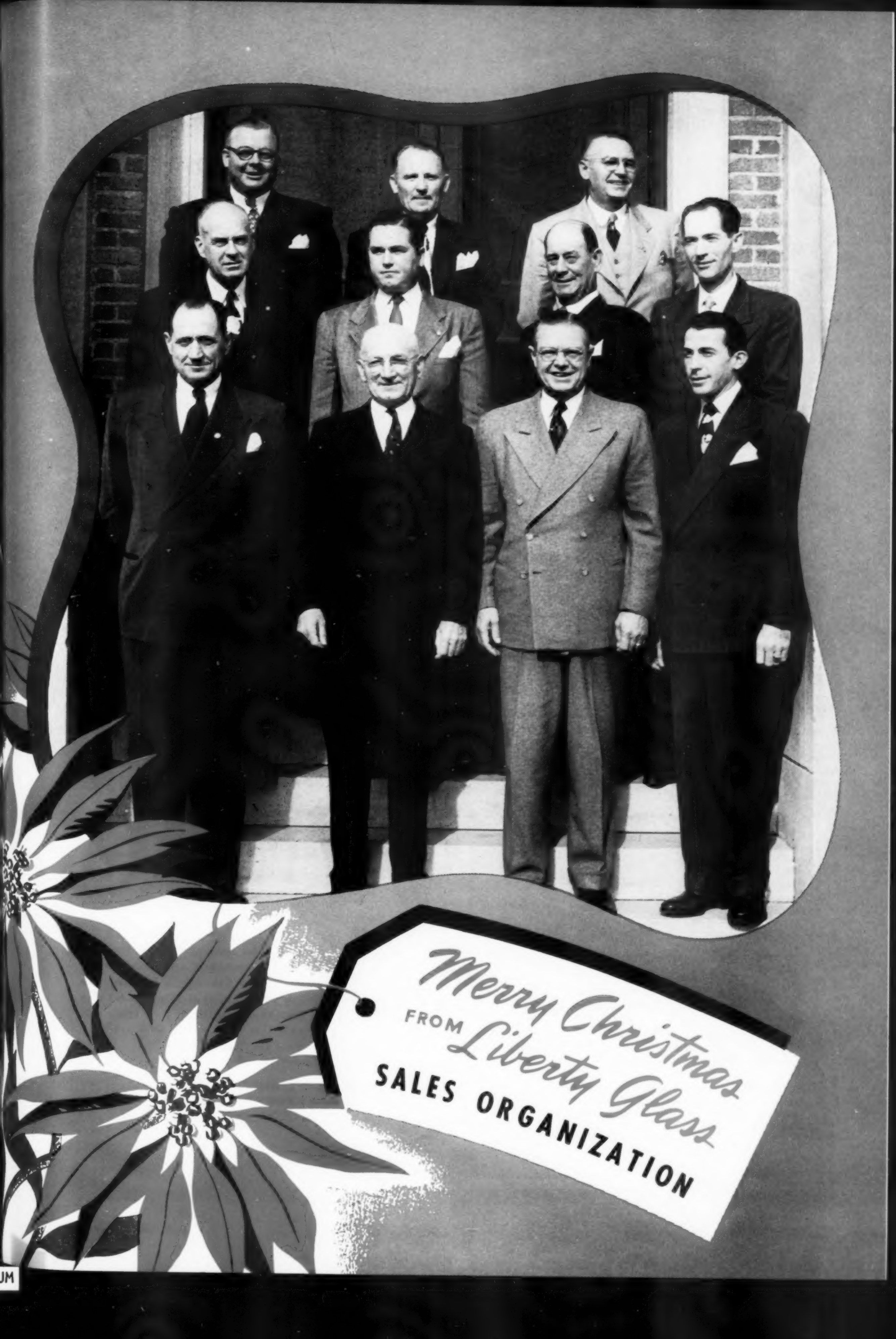
One milk plant, for example, has a commercial cameraman visit various homes of families who patronize their routemen. Here informal candid camera snaps are taken of the family, children if any, family pets—and the home itself. Then these photographs are utilized in a series of newspaper advertisements entitled "Our Families."

This same milk plant has another use for the motion picture camera. It has a commercial photographer make a series of films showing the routemen and their families and homes. These pictures are flashed on the silver screen at various neighborhood theatres in the suburban area and has been found to provoke much interest on the part of theatre goers.

Another milk plant has a little different thought on the situation. This plant has a tieup with a television station in Salt Lake City. The telexision station sends its cameras to the dairy where the television watcher is taken on a cook's tour of the premises, with a television announcer acting as commentator. KSL-TV has offered its television viewers, several such "Tours to a Dairy," and this television featurette has been found to be very popular indeed.

This same milk plant has one final thought with regard to motion pictures and television useage. It has prepared a film which it calls "Visit to A Farm." This film takes the viewer on a trip to a typical farm and closeups are shown of the milking process and the trucking of milk into the dairy. This film is shown before members of rural groups such as 4H, Grange and Farm Bureau and also at various theatres within the city.

The Evalona Dairy in Denver now offers each month an award of $10.00 to the teenager voted the "sportswoman of the month." This must be a girl in any local high school within the city. Any student of a high school may write out a ballot nominating any girl they desire and leave the ballot with any routeman or merchant. One ballot a month may be cast by any student. Girl chosen as sportswoman of the month can be active in any school sports, her picture is used together with statement on "Why Milk Helps Me Keep Physically Fit." This contest runs during nine months of the calendar year and ties in with the milk plant's desire to increase milk purchases on the part of the teen ager.


Merry Christmas
FROM Liberty Glass
SALES ORGANIZATION

XUM

"The bonds I bought for our country's defense —will see my twins through college!"

"Back in 1942 I joined the Payroll Savings Plan at the U. S. Naval Ordnance Plant where I work as an executive secretary. I put 10% of my salary into bonds to help win the war. And I still buy bonds."

"Through careful managing, the twins and I have lived comfortably and saved too. This fall the twins will enter Butler University—thanks to U. S. Savings Bonds, the best way to save I know!"

HOW U. S. SAVINGS BONDS ARE PAYING OFF FOR MRS. MARY CALLON OF INDIANAPOLIS, INDIANA

"Meet Janet and Jack, my *twin* reasons for buying bonds," says Mary Callon. "Even though I'm a widow, these children are going to have a college education. The U. S. Savings Bonds I bought will see them through!"

Mrs. Callon's story can be your story, too!

What Mary Callon did, you can do, too—and just as easily! Just take these three simple steps—*today:*

1. *Make one big decision—to put saving* first, *before you even touch your income.*

2. *Decide to save a regular amount* systematically, *week after week, or month after month.*

3. *Start saving automatically by signing up* today *in the Payroll Savings Plan where you work or the Bond-A-Month Plan where you bank. You may save as little as $1.25 a week or as much as $375 a month. If you can set aside just $7.50 weekly, in 10 years you'll have bonds and interest worth $4,329.02 cash!*

You'll be providing security not only for yourself and your family but for the free way of life that's so important to us all. And in far less time than you think, your plans will turn into reality, just as Mary Callon's are doing.

FOR YOUR SECURITY, AND YOUR COUNTRY'S TOO, *SAVE NOW*—THROUGH REGULAR PURCHASE OF U. S. SAVINGS BONDS!

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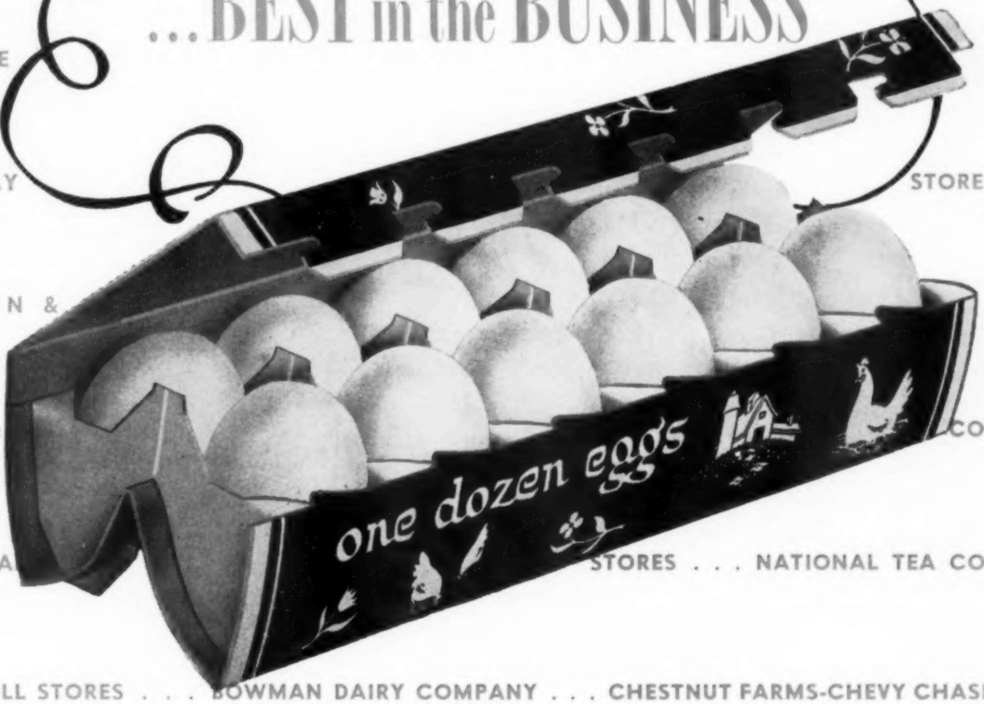

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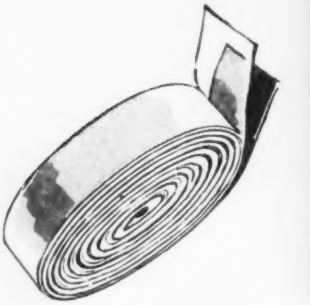

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There just aren't enough pages in this issue of American Milk Review to give a satisfactory description of the unlimited uses industry has found for VISQUEEN polyethylene film. For packaging, shipping, storing — it's a completely new and radically different method with startling possibilities.

VISQUEEN film is strong, pure and odorless. It will handle liquids, semi-liquids, hygroscopics, acids and alkalis with perfect safety. The film is moisture-proof, non-toxic and chemically inert. Extremes of temperature or humidity changes leave it unaffected—at 94 degrees below zero VISQUEEN is strong and flexible. Available in a variety of thicknesses from very thin to very thick, and in clear seamless tubing or sheeting. Produced in a wide range of widths, VISQUEEN has been made in tubing as wide as 120 inches.

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All polyethylene film is not VISQUEEN. VISQUEEN is the only film produced by the process covered by U.S. Patent No. 2461975. Only VISQUEEN film has the benefit of the research and extensive technical experience of The Visking Corporation, pioneers in the development of polyethylene film. Be sure. Always specify VISQUEEN film for superior tear and tensile strength and greater uniformity.

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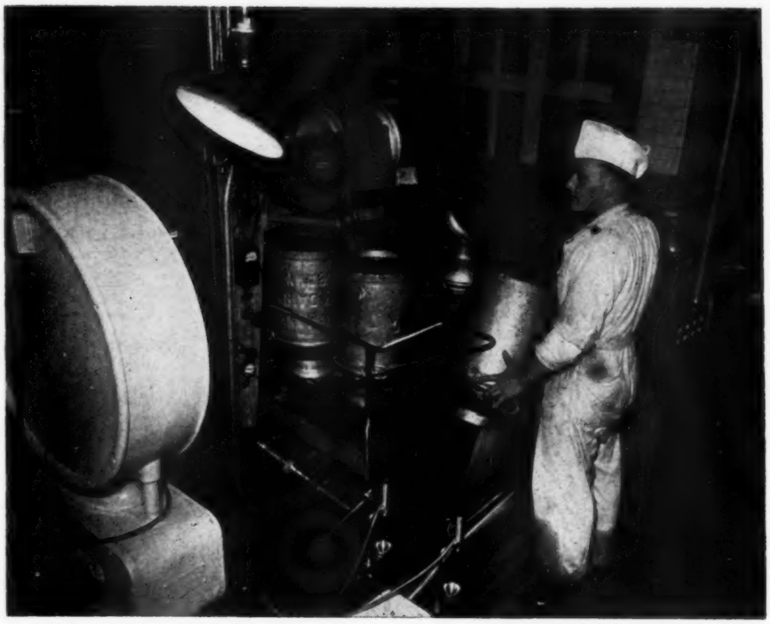

The condition of the milk can at the farm is of the utmost importance if we are to realize a quality raw material with which to work in the plant. The key to the condition desired is in the can cleaning operation, says the author.

Looking at Can Washing Operations

By H. N. NUPSON

Redwood Falls, Minnesota

IN THE QUARTER of a century that I have been identified with the dairy industry—most of that time in the Northwest area—improvement in the quality of milk and cream has been, and still is, of primary importance. There is no question that in this time quality improvement has been generally noted. Reasons for this include the demands of the consumer, the activity of the regulatory bodies and a better understanding of the problem by health department officials, inspectors, plant managers, quality fieldmen and the producers themselves. However, I believe that everyone in the dairy industry realizes that in the problem of quality improvement, both in the raw material—milk and cream—and in the finished dairy product, there is room and need for much more work to be done. No doubt this situation will exist for years to come; were it not for this some of us might run out of work, and I am not afraid of that happening.

Most of you will agree that the majority of our producers find it possible to produce an improved raw milk or cream. The newer dairy barns are designed to facilitate the production of higher quality. Milk houses fall into a similar category and certainly more efficient cooling methods have come into the picture. The same may be said with respect to many other factors in the production of milk and cream.

It is a recognized fact that in recent years most plants have installed more modern equipment, have greatly improved facilities with which to work and, in general, better methods and techniques are employed.

Quality Troubles

In spite of the improvements cited we still have trouble in the quality and excellence of our finished dairy products. Much of this trouble can be traced to off-flavors, high bacteria counts, and bad sediment pads of the milk and cream coming into our plants.

Several years ago, thinking about this situation, I began to wonder if bad cans, coming from the plants where the producers were shipping, could be a major cause of this condition. For some six to eight weeks I took it upon myself to make a rather hurried "can condition" survey. This was primarily a physical survey. Perhaps a bacteriological survey would have been more revealing but in view of the extremely bad conditions that were discovered at the time, the simple physical survey served the purpose very well. The results were used in talks at a number of Operators' meetings. Quite a few managers took sufficient interest to examine the cans in their plants and a number instituted a program of hand cleaning. This resulted in great improvement in the quality of the milk and cream coming into their plants.

About a year ago, realizing the close connection between quality of the raw materials and the condition of the can, I started an intensified program. This involved many angles and included close attention to can washing operations. With the smattering of data obtained, I contacted some of the men on the staff here at the University of Minnesota, hoping they might have done or were doing some research along the same line. They were interested in my results and said they certainly would like to see more done in this field. Unfortunately such projects require MONEY, TIME and PERSONNEL.

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*Presented at the University of Minnesota Dairy Products Institute, September 20, 1950.

I am certain that in the average home the housewife uses the very best of raw food stuffs. She exercises care in preparing them in pots and pans that are clean. She would not think of serving these carefuly prepared delicacies in unclean dishes or set her table with dirty silverware. By the same token, why produce top quality milk under the best of farm conditions and then transport the raw milk to a fine, clean, well-operated plant in cans that are filthy and reek with millions of harmful bacteria? That just doesn't make sense.

Can Cleaning Is Key

It is of the utmost importance that me must pay close attention to the condition of our cans. The key to the condition desired is the can cleaning operations. I will skip over can construction, except to state that cans with open seams, rusty, or with poor tinning should be taken care of. Some may need to be thrown away. Let us examine some of the many factors involved in can cleaning methods.

Can washers may be listed as being of three general types: 1 — straight line, 2–rotary, 3–cabinet. In construction can washers should have or need: 1–a drip or drain stop, 2–a prerinse, 3–wash tank, 4–hot water rinse, 5–steam rinse, 6–air dry.

There are several theories of operation as indicated by various and sundry experts. It is interesting to note some of the methods used:

1–Alkali either straight or in combination with water conditioning chemicals.

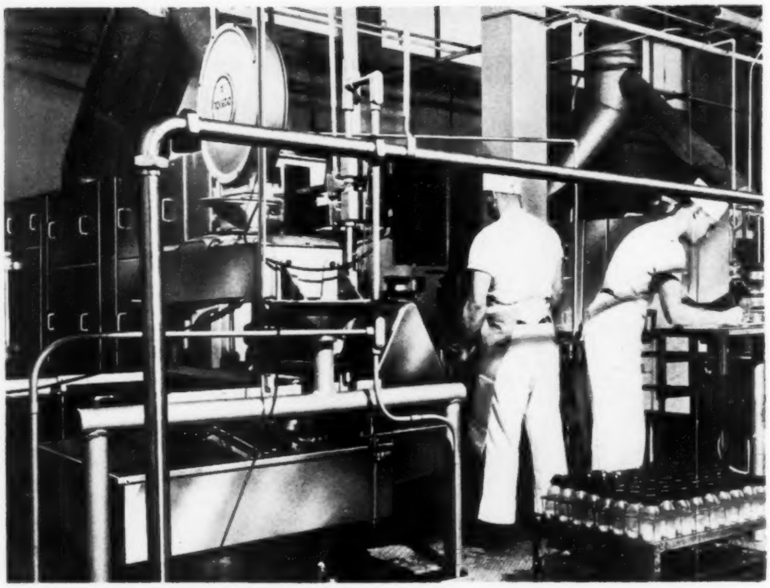
2–Low alkali with high wetting agent.

3–Mild acids with wetting agents or alternate alkali-acid in conventional machines.

4–Low alkali with high calcium sequestering compound.

5–Sprays that leave a film residue on the cans.

Most can washers are made with the idea that alkalies are to be used for the wash tank solution. However, acids are sometimes used for two consecutive days in one-week or two-week periods. Continuous use of acids in alkali washers are too severe on iron parts, galvanized metals and fittings. On machines intended for the continuous use of acids, pipes and fittings are of brass which is not readily damaged by low concentrations of mild acid solutions. Most of my experience has been with washers using alkali with sufficient water conditioner to compensate for the water hardness.



Only good equipment carefully maintained should be used. A check list for both the pre-rinse and wash tank operations plus a simple test for the wash tank solution are desirable.

Good Equipment A Must

In a can washer, as with any other machine, it should first be determined that this piece of equipment is in A-1 working order. No one can expect a well-cleaned can to be delivered from a washer that does not work properly. There are a number of points that should be carefully checked.

Pre-rinse Operation:

1. The jet opening should be free of lodged particles and directed to the center of the can opening.

2. The water pressure should be between 30 and 60 pounds. A booster pump may be needed on many installations.

3. The water pipe line should be fully open and free of scale.

4. The dogs (operating valves) should not be loose or worn and should be free of build-up.

Although wash tank operation is next, let's leave it momentarily and come back to it just a bit later on. Instead I would like to consider Hot Water, Steam and Air:

1. The jet openings should be free from scale and build-up and lined up properly.

2. All lines should be free of scale and capable of full capacity.

3. The pressure of the hot water rinse should be adequate.

4. The pump–check capacity and condition; impellers, packing, etc.

5. The springs and dogs operating valves should be checked.

6. The temperature of the hot water rinse should be around 180°F. on all except single tank washers.

7. The steam supply should be adequate and dry. Wet steam makes for a moist can.

All portions of the washer should be checked periodically for worn and broken parts and replacements should be made. If the washer is loaded with deposits of scale and build-up it should be removed by using a scale-removing agent, which is an inhibited acid. Follow the manufacturers directions in the use of such products.

Now let's examine the

Wash Tank Operation:

1. Float Valve–Check this carefully. A stuck float valve means loss

of water, heat and strength of the alkali solution.

2. Solution Temperature—The most desirable range is 140° to 145°F.

3. Heating Coils – Leaking coils again mean losses in heat units and alkali strength.

4. Jet Openings—Check for direction and clogged condition.

5. Pump—Check for condition and pressure.

6. Solution Strength—Check regularly for percent active alkalinity.

To maintain a constant strength of the wash tank solution a suitable, workable feeder should be provided on all washers. Here again we run into numerous types—no wonder one becomes confused! Of the types commonly found, feeders can be listed as follows:

1. Hand feeding—suitable for only very small operations.

2. Type where water washes compound out of feeder into tank.

3. Feeders for briquets.

4. Positive feeder or shot type—regulated amounts of solution released to wash tank as can trips a dog.

5. Electronic type – controlled by conductivity of the alkaline solution.

6. Displacement type.

7. Gravity type—volume controlled by various devices.

Satisfactory Alkalinity

The question arises as to what constitutes a satisfactory active alkalinity expressed as Na_2O (sodium oxide) for a can washer solution. There seems to be a wide divergence of opinion on this. Based on research done by several of our agricultural college stations a range of .05% to .10% is indicated. With most can cleaning compounds an active alkalinity of below .05% results in high bacteria counts excessive numbers of particularly undesirable types of bacteria and a can that is not well cleaned. Running above .10%, particularly with some types of compounds, may result in the tinning being scored or otherwise harmed. However, some of our larger operators with numerous branch plants or receiving stations now insist on a much higher active alkalinity of up to .15%. I have aimed for an active alkalinity of just below .10% and have had very excellent results in this range.

Never guess as to what the strength of the wash tank solution is—that just won't work. One of several simple tests eliminates guesswork. Here are two suggested tests.

First Test:

1. Pipette 10 ml. wash tank solution into a Ehrlmeyer flask or some other clear glass container.

2. Add two or three drops phenolphthalein indicator; this produces a pink color.

3. Using a graduated 1 cc pipette add standard acid until the pink color disappears.

4. Read measurement of acid used on pipettes. Example: if .78 cc acid was used, the active alkalinity of the solution tested would be .078%.

Second Test:

1. Place wash tank solution in test tube to 10 cc mark.

2. Add mixture standard acid-indicator (Brome Thymol Blue is the indicator used) a drop at a time, holding dropper-pipette at an angle of 45°. Mix after adding each drop. After adding the first drop the mixture becomes blue and deepens in color with each drop until the end point, which is a color change from blue to yellow.

3. Count the drops used. Each drop of acid-indicator used equals 0.01 active alkalinity. Example: if eight drops were required, the strength of the solution would be .08%.

Note: If the solution is very dirty, brownish in color, and very low strength, in this test it may be difficult to tell when the color change occurs. To overcome this, after the solution has been measured into the test tube a few drops of phenolphthalein indicator may be added. This produces a pink color. The end-point is reached when the solution changes from pink to yellow. The same calculations, based upon the amount of acid required, are used as before.

There are many excellent can washers on the market. If given proper maintenance and operated according to the manufacturer's directions the machines will give good service. Manufacturers of well known machines whose advertisements appear in Urner-Barry publications are:

Cherry-Burrell Corporation
Creamery Package Manufacturing Co.
Damrow Brothers Co.
General Dairy Equipment, Inc.
Girton Manufacturing Co.
Kendall-Lamar Corporation
The Lathrop-Paulson Co.
Purity Manufacturing Co.
Rice and Adams Corporation
Stoelting Brothers Co.
R. G. Wright Co.

Hand Cleaning

Earlier I mentioned the hand cleaning of cans that were in very bad condition. Where machines have been poorly operated—valves stuck, pumps not working, lines and jets plugged, alkali strength down to nearly nothing, etc.—the cans are bound to be in terrible condition. Even when operational conditions have been corrected it would take a long time to remedy the can condition. Where this has happened I would suggest the hand cleaning program for all of the cans. Use one of the mild, inhibited liquid acid detergents. With our own product, Pennclean, a quart to each 20 gallons of water is about right. I suggest a wash sink that will handle three or more cans at a time. This allows two or more cans to soak in the solution while working on one. This will make the job much easier. A good redwood trough, tank or sink is especially good for this job. The solution should be as hot as the hands can stand; using gauntlet rubber gloves will permit of a hotter solution. I recommend cleaning the outsides of the cans, too, as your patrons will be more apt to notice that a job has been done. A metal sponge may be used on the outsides, but never use a metal sponge on the insides of the cans. As the acid is used up or the solution becomes dirty, either add more acid or make up a fresh solution. After cleaning up the outsides, the cans should then go to a wash sink with a warm manual cleanser solution. A utensil or can brush should be used on the insides and this will readily remove the material that was loosened

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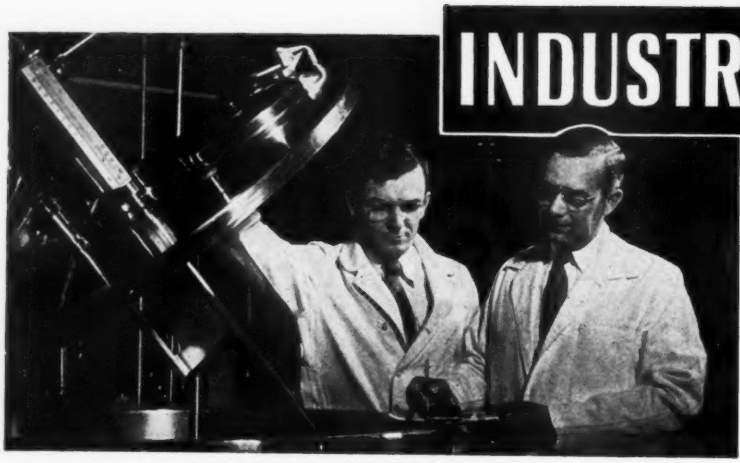
INDUSTRY PROBLEMS



Dr. Robert F. Holland and Dr. James C. White, both of the Department of Dairy Industry at Cornell University, conduct their question and answer column each month in the "Review". Questions should be addressed to either Dr. White or Dr. Holland, Department of Dairy Industry, Stocking Hall, Cornell University, Ithaca, N. Y.

Kefir Milk

QUESTION—A few weeks ago I read an article in the "American Milk Review" describing a method for making Yoghurt. My family used to make a product called "Kefir" which we liked to drink and which was made easily in the home. Can you describe its manufacture and tell where the "grains" may be obtained?

J. D. C., Delaware.

ANSWER—Kefir fermented milk is somewhat like buttermilk in consistency, has a pleasant acid flavor, and contains about 1 per cent of lactic acid, some carbon dioxide, and small amounts of alcohol. The starters or "grains" are gelatinous particles about the size of a pea and contain acid-producing bacteria and milk-sugar fermenting yeasts. This starter is active at temperatures lower than are commonly used for the incubation of ordinary cultured buttermilk and easily overgrow the normal flora of milk.

The flavor of different batches of kefir may vary considerably depending on the manufacturing process used. Little equipment is needed for the manufacture of this product so it can be made easily in the home or in the small milk plant.

Either pasteurized or raw milk may be used in making kefir. Raw milk should be heated to 165°F. and cooled before inoculation. Adjust the temperature of the skim milk to 70°F. and then add 1 part of kefir grains to 3 parts of milk. Place the mixture in unstoppered jars or bottles but cover with inverted cups or clean, dry cloths. Now incubate at 57°-61° F. with frequent stirring or shaking. After 8-10 hours strain the milk through a cheese-cloth or metal sieve to remove the grains and put the milk in bottles. Stopper the bottles and hold at the same temperature as before, shaking every few hours to prevent the product from becoming lumpy.

The kefir milk will be ready to use at the end of 24 hours. Shorter ripening periods or lower temperatures will give a product with lower acidity. Kefir should be stored in the refrigerator if not used at once.

The kefir grains that were strained out should be washed with clean, cold water and may then be added to a new supply of milk.

To make kefir buttermilk on a large scale, place pasteurized skim milk in a vat and cool to 68°-72°F. Suspend a cheese-cloth over the entire vat and let it sink a few inches below the surface. Scatter the kefir grains over the cheese-cloth. Maintain the temperature by running cold water through the vat jacket if necessary and incubate until about 1 per cent acidity is reached. Now lift out the cheese-cloth and kefir grains permitting the curdled milk to strain into the vat. Wash the grains in clean, cold water for re-use.

Cool the vat of milk to 50°F. or below and break up the curd by gentle agitation. After the curd is broken, strain and bottle the milk and store it at 40°F. or below until used.

Kefir grains may be purchased dry from the American Type Culture Collection, 2029 M Street, N. W., Washington 6, D. C. A charge of about $2.50 per culture is made.

To return the dry grains to active condition, soak for 2-3 hours in tepid water, then in a 1 per cent solution of sodium bicarbonate for a few hours. Sort out the grains that are swollen, elastic and clear in appearance, rinse them with water and add them to fresh pasteurized skim milk at 70°-80°F. After 24 hours transfer the grains to a new supply of milk and continue making transfers until the grains rise to the surface during fermentation. They now have returned to normal activity and are ready for use.

More detailed instructions may be obtained from the U.S.D.A., Agricultural Research Administration, Bureau of Dairy Industry, Washington 25, D. C. Ask for leaflet BDIM–Inf.–58, "Directions for Making Kefir Fermented Milks," by L. A. Burkey.

Drying Hog, Horse, and Donkey Milk

QUESTION — Kindly advise the undersigned whether or not it is possible to produce dry skim milk from the milk of such animals as the hog, the horse and the donkey. We will sincerely appreciate your kind courtesy in giving us this information.

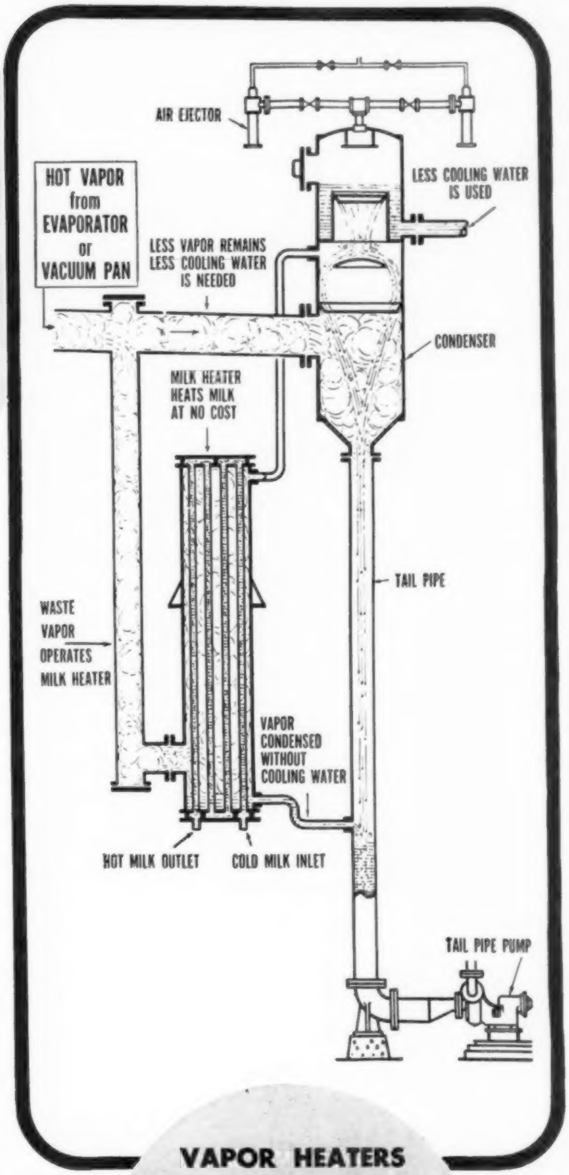
R. S. Q., New York.

ANSWER—It is no more difficult to produce dry skim milk from the milk of hogs, horses, or donkeys than it is from cows' milk except for the extreme difficulty of assembling

(Please turn to Page 71)

HOW *Buflovak* VAPOR HEATERS

SAVE VALUABLE STEAM AND COOLING WATER


AIR EJECTOR
HOT VAPOR from EVAPORATOR or VACUUM PAN
LESS COOLING WATER IS USED
LESS VAPOR REMAINS LESS COOLING WATER IS NEEDED
CONDENSER
MILK HEATER HEATS MILK AT NO COST
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Fuel shortages may become acute. You can help beat a shortage and ensuing higher prices by equipping your present or new BUFLOVAK Evaporator with a BUFLOVAK Vapor Heater. The Vapor Milk Heater is usually installed between the last Effect and the condenser. Vapor heat ordinarily lost in the condenser is used in BUFLOVAK Vapor Milk Heater to heat milk from 40°F. - 115° F. at no fuel cost whatever. The amount of cooling water used in the condenser is sharply reduced because less vapor remains to be handled in the condenser. In Triple Effects, savings of 67% in steam and 80% in cooling water are realized over Single Effect operation. A conservation of over 50% in both steam and cooling water is realized in Double Effect operation.

VAPOR HEATERS CAN BE FURNISHED WITH NEW *Buflovak* EVAPORATORS OR FITTED INTO EXISTING INSTALLATIONS

Buflovak EVAPORATORS

The latest type BUFLOVAK Milk Evaporators have many profit-building features. The new close-coupled tangential Vapor Separators reach a new high in recovering valuable milk solids. They are thoroughly sanitary; cleaning is easier than ever; and they take less floor space. Automatic controls give peak capacity and quality performance with less operating attention.

There is a type and size to profitably meet every requirement for producing concentrated milk products.

WRITE FOR BULLETINS 343 AND 344

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A major result of research in synthetic rubber has been the development of the proper tools with which to handle the material. Photo shows a laboratory model of a vulcanizing press designed and built by The Creamery-Package Manufacturing Co.

Photos Courtesy Creamery Package Mfg. Co.

A battery of vulcanizing presses are shown here bonding gaskets to stainless steel heat exchange plates. In the foreground a finished gasket-bonded plate is being removed from the press. Two girls operate three presses.

Synthetic Rubber Has Great Future in the Dairy Industry

Special Requirements of Milk Processing Can Be Met By Varied Properties of These Remarkable Compounds

THE USE of synthetic rubber is on the increase in the dairy industry. Technically synthetic is referred to as "resilient material." Its growing prominence in dairy equipment is due to extensive developments made and still being made in the production of this type of material.

Some rubber users think of synthetic rubber as being merely an imitation rubber, used because it is more available or because it is lower in cost. This is not true. Synthetic rubber has special uses in the dairy industry where natural rubber is totally unsuited and would give most unsatisfactory service particularly when subjected to heat or contact with butterfat or other greases. Synthetic rubber, which may or may not be compounded with small amounts of natural rubber and often at an increase in price, can be compounded to serve dairy requirements much better than natural rubber.

The term synthetic rubber is a general expression and does not refer to just one material. A synthetic may be made from any one of several basic ingredients and may be any one of hundreds of compounding variations, all producing materials with different service characteristics.

Even though synthetic rubber and natural rubber may be so totally different in service, they resemble each other so closely in appearance that it is more or less customary for the user to refer to all rubber-like material as rubber. This custom will be followed here by using the word rubber to indicate all synthetic rubber or compounds which may or may not contain natural rubber.

Rubber Must Be Right

Frequently when a rubber fails to stand up in service in dairy work, the equipment manufacturer blames the rubber manufacturer as furnishing an imperfect rubber. The real cause usually is that the rubber was not properly selected for the service to which it was put.

At about the end of World War II, The Creamery Package Mfg. Company made a survey of various rubbers being used as so-called dairy rubber. The project was assigned to Frank B. Gilbert, one of Creamery Package's research engineers, who immediately equipped a laboratory with special equipment required for making a further study of the rubber problem from a practical dairy requirement standpoint.

Many phases of rubber application and uses were investigated and highly satisfactory results developed. One of the first problems was the production of a truly vulcanized bond between molded rubber and stainless steel. An investigation of bonding procedures practiced by most rubber plants showed mechanical bonds being accepted and considered satisfactory for purely mechanical strength if a certain percentage of the bonded area adhered with the remaining area loose. This was not acceptable from a sanitary standpoint. Bonds that adhered over 100% of the bonding area were the goal. The only encouragement from the bonding experts was a statement that it was a "tough problem" and many expressed an opinion that it was impossible. Activity in the laboratory produced the first usable results. As each improvement was developed in the laboratory, it was tried and checked in the field under actual plant operating conditions until users of equipment as well as dairy engineers were fully satisfied. By this procedure, the problem of insuring maximum gasket life on heat exchanger

(Please turn to Page 72)

A *Sharples* ALL-STAINLESS STEEL SUPER MILK CLARIFIER

PAYS OFF

IN UNEXCELLED CLARIFYING EFFICIENCY

POSITIVE SEDIMENT REMOVAL

LOWEST CELL-COUNT MILK

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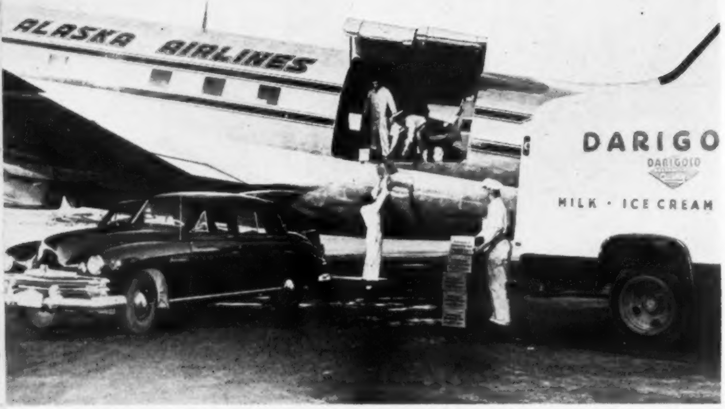
MILK FLIES to ALASKA

By LON FANALD



This milk being loaded into an Alaska bound plane will sell for as much as a dollar a quart when it reaches its destination. Fresh milk in Anchorage restaurants finds a market at thirty cents a glass.

Exclusive feature

When you talk to Alaska Airlines officials about flying milk to Alaska, they ask you: "Via the cow, via the bottle, or how?" And there is more reason than rhyme to their question because Alaska Airlines recently flew a goodly number of high grade dairy cattle into Anchorage at an air freight charge of around $200 per cow.

The idea of flying fresh milk to Alaska started back in 1946 when Phillip Dybbro who operated the H & D Market in Anchorage had a big demand for fresh milk.

"This new demand," Dybbro said, "came from the large influx of workers and their families who came to Alaska during the war. These people had been used to fresh milk in the States and could not get along with powdered or canned milk as the 'native' Alaskan had learned to do. There was not sufficient milk produced locally, even in the summer and during the winter months production fell to practically nil."

Dybbro made a trip from Anchorage to Seattle in early '46 and arranged for 200 quarts to be flown to Anchorage twice a week. Alaska Airlines handled the milk. Alaska Airlines moved their headquarters from Seattle to Everett so the milk was flown out of the Everett airport. At first Meadowmoor Dairy furnished the milk. Later three large milk plants at Everett participated in the milk air lift: Darigold, Meadowmoor, and Arown. And today these three companies are regularly flying milk from Everett to Alaska.

While the bulk of fresh milk going by air to Alaska comes from Everett, some is being flown in from Seattle. This is being furnished by Alpine Dairy, Darigold, and Carnation.

Some fresh milk is being flown to Fairbanks, both from Everett and Seattle. This airlift was started a year after the Anchorage arrangement.

In Anchorage a glass of fresh milk at a restaurant costs from 25c to 30c. At grocery stores and other outlets fresh milk retails for 50c to 60c per quart.

Some milk goes on from Anchorage by "Bush Plane" to the interior. At far off points this fresh milk retails for $1 per quart.

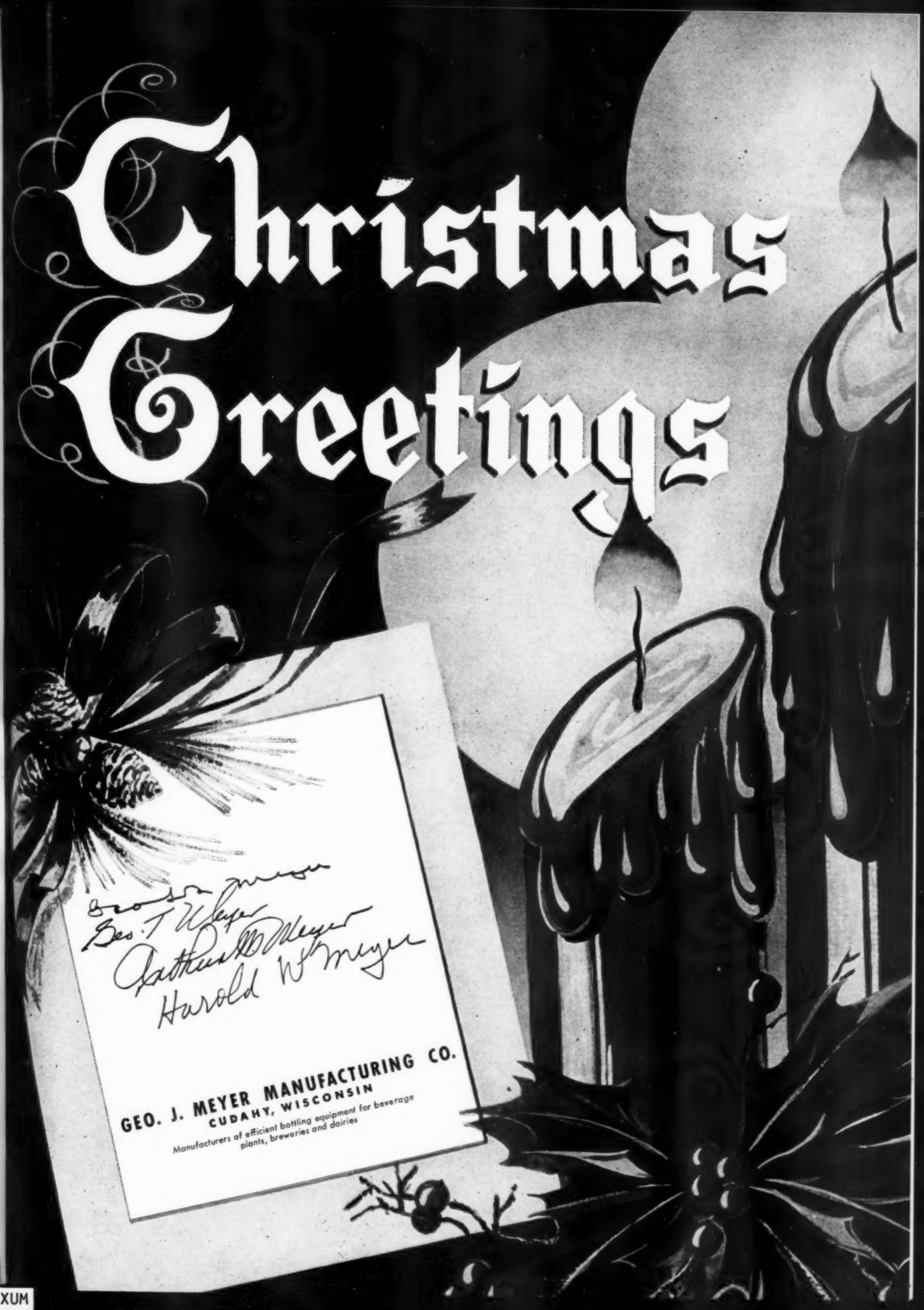
From the small beginning of 200 quarts twice a week, today a vast amount of fresh milk and other dairy products are flown to Alaska from

(Please turn to Page 72)

ALASKA AIRLINES

Importation of dairy cows into the north country is on the increase as the demand for milk grows. Cost of shipping a cow via air freight from Everett, Washington, to Alaska is about two hundred dollars.

XUM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Greetings

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CUDAHY, WISCONSIN
Manufacturers of efficient bottling equipment for beverage plants, breweries and dairies

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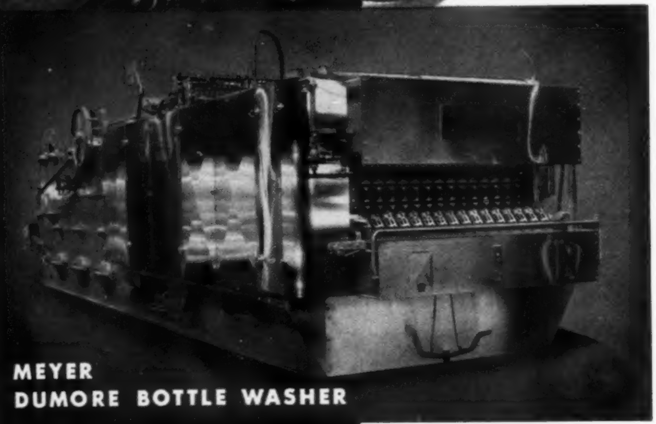
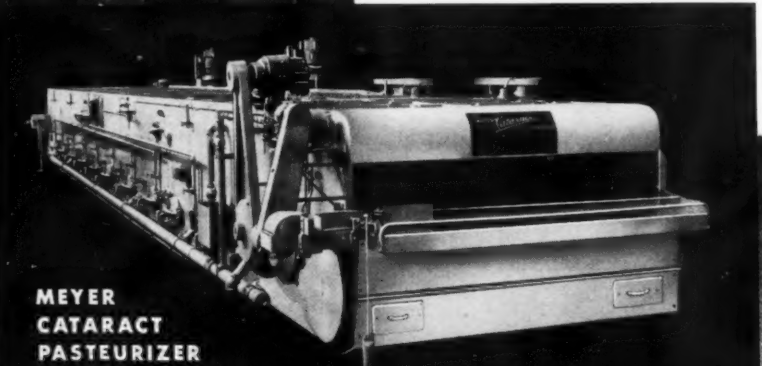
for a

PROSPEROUS
NEW YEAR



MEYER
DUMORE BOTTLE WASHER

MEYER
DUMORE JUNIOR
BOTTLE WASHER



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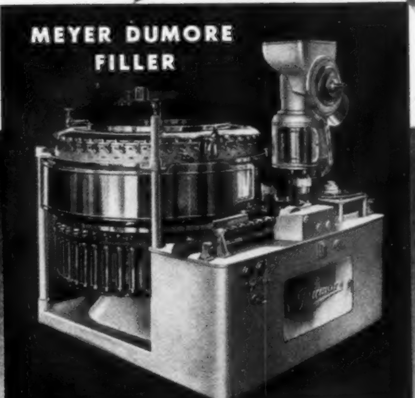

MEYER DUMORE
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USED THE WORLD OVER
MEYER
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BOTTLING EQUIPMENT

GEO. J. MEYER MANUFACTURING CO.
CUDAHY, WISCONSIN U. S. A.
Manufacturers of efficient bottling equipment for beverage plants, breweries and dairies

PROUD
OF ITS OPERATION

Read what one satisfied customer has to say about the **NEW KENDALL RETURNLINE CAN WASHER.**

You, too, may enjoy the same economy of operation and increase in profits.

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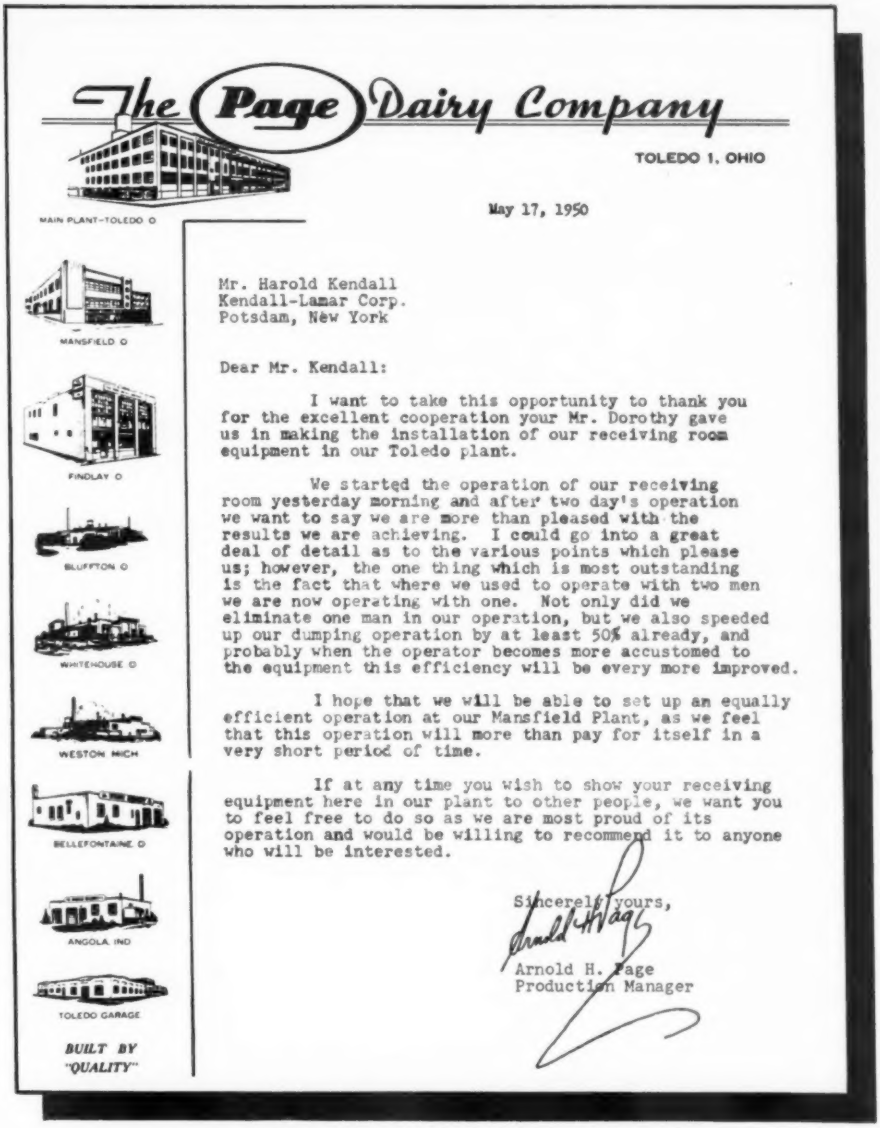
Check
THESE FEATURES

- ★ **Partition separates cleaning from sterilizing stations.**
- ★ **Saves costly space.**
- ★ **Provides maximum visual inspection for incoming AND outgoing cans.**
- ★ **Eliminates necessity for separate reject conveyor.**
- ★ **Completely accessible for cleaning and adjusting.**
- ★ **All controls within easy reach.**



The Page Dairy Company

TOLEDO 1, OHIO

MAIN PLANT—TOLEDO O
MANSFIELD O
FINDLAY O
BLUFFTON O
WHITEHOUSE O
WESTON MICH
BELLEFONTAINE O
ANGOLA IND
TOLEDO GARAGE

BUILT BY "QUALITY"

May 17, 1950

Mr. Harold Kendall
Kendall-Lamar Corp.
Potsdam, New York

Dear Mr. Kendall:

I want to take this opportunity to thank you for the excellent cooperation your Mr. Dorothy gave us in making the installation of our receiving room equipment in our Toledo plant.

We started the operation of our receiving room yesterday morning and after two day's operation we want to say we are more than pleased with the results we are achieving. I could go into a great deal of detail as to the various points which please us; however, the one thing which is most outstanding is the fact that where we used to operate with two men we are now operating with one. Not only did we eliminate one man in our operation, but we also speeded up our dumping operation by at least 50% already, and probably when the operator becomes more accustomed to the equipment this efficiency will be every more improved.

I hope that we will be able to set up an equally efficient operation at our Mansfield Plant, as we feel that this operation will more than pay for itself in a very short period of time.

If at any time you wish to show your receiving equipment here in our plant to other people, we want you to feel free to do so as we are most proud of its operation and would be willing to recommend it to anyone who will be interested.

Sincerely yours,

Arnold H. Page
Production Manager

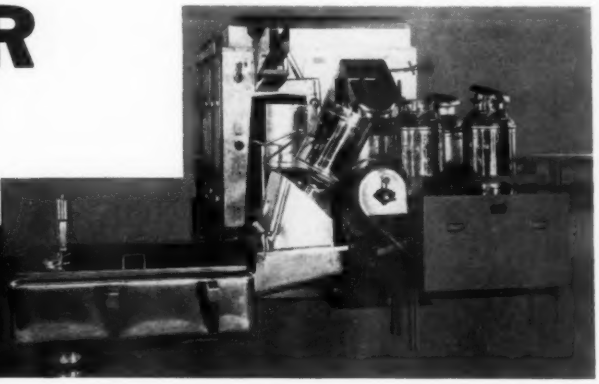
3 PAGE DAIRY COMPANY PLANTS HAVE NOW INSTALLED THE KENDALL RETURNLINE WASHER

●

RETURNLINE CAN WASHER

Write Today for Full Details

FEATURING A 150° DUMPING ARRANGEMENT



KENDALL-LAMAR CORPORATION
POTSDAM, NEW YORK

XUM

Equipment Outlook Confused As Defense Program Begins To Roll

Stainless Steel Supply Critical, Other Materials Likely to Be Scarce—Industry Will Get Breaks

By **NORMAN MYRICK**

AS THE nation enters upon its second great armament program in the space of ten years the dairy industry faces certain limitations in supplies and equipment. These limitations will not provide all of the material that milk plant operators may desire, but will, as far as it is possible to forsee, provide enough for the job to be done.

Information gathered from government agencies, manufacturers, and committees from the industry charged with presenting the industry's needs substantiate this contention. Out of the welter of rumor and counter rumor that distorts the actual situation three important facts emerge. Up to the present time only a few orders limiting the disposition of important raw material have been issued. The second fact is that governmental agencies are still in the explorative stage and are definitely not ready to promulgate restrictive orders until they have digested the information on industry requirements that has been gathered. Finally the very best thing that the dairy industry can do is to keep its collective shirt on, estimate its future needs as accurately and honestly as possible, and bend every effort to conserve its present plant through careful maintenance and intelligent operation.

The task confronting the Republic is an enormous one. It is a task made necessary by circumstances beyond the control of any agency or any individual. It is a brutal, unrelenting reality based on a primitive jungle concept of force. The problem is to build the necessary counter force with as little impairment of the business of living as possible. That that business will be impaired is certain. To what extent and for how long no man is in a position to say. As far as the dairy industry is concerned it will probably get all the supplies and all of the equipment it needs to fulfill its essential function in processing and distributing foods. It will probably not get any more than that.

Stainless Steel Scarce

The availability of stainless steel in the form of sheets, plates, bars, and tubing as well as stainless steel and nickel in cast form has been seriously curtailed under the nickel limitation order. Production under this order will be only 250,000 tons as compared to a production capacity of 600,000 tons. Of this 250,000 tons only about an eighth or 50,000 tons will be available for industry. Apparently the government is building up its stock of nickel, a prime ingredient in armor plate.

A leading manufacturer of dairy equipment advises that in the light of this situation plants will produce less equipment than is required to take care of customers and costs will continue to advance over current manufacturing costs. Stocks of stainless steel on hand will probably cushion the effect of the shortage on equipment manufatcurers but the outlook is bleak as this segment of the industry enters the new year.

Demands for caustic soda, soda ash, and chlorine have reached the point where the Alkali-Chlorine Industry Advisory Committee has recommended the distribution of "DO" rated priority orders among domestic producers of these chemicals. A "DO" rating is a defense order priority.

Containers are being studied and, although there is no definite action yet, there is a definite possibility of limitation. Government officials with whom I talked expressed the opinion that because of its essential character the dairy business would be the last to feel any pinch. Similarly on closures, the word is that the dairy industry will get what it needs to do the job it is supposed to do but not a great deal more. Probably the most pressing closure problem relates to aluminum caps. The aluminum order NPA Order M-7 involves a 35 per cent cut back in aluminum and the effect of this will undoubtedly be felt by manufacturers of aluminum caps. However, even in this area, the feeling is that while there will be no supplies available for expansion there will be enough material for needs based on present experience.

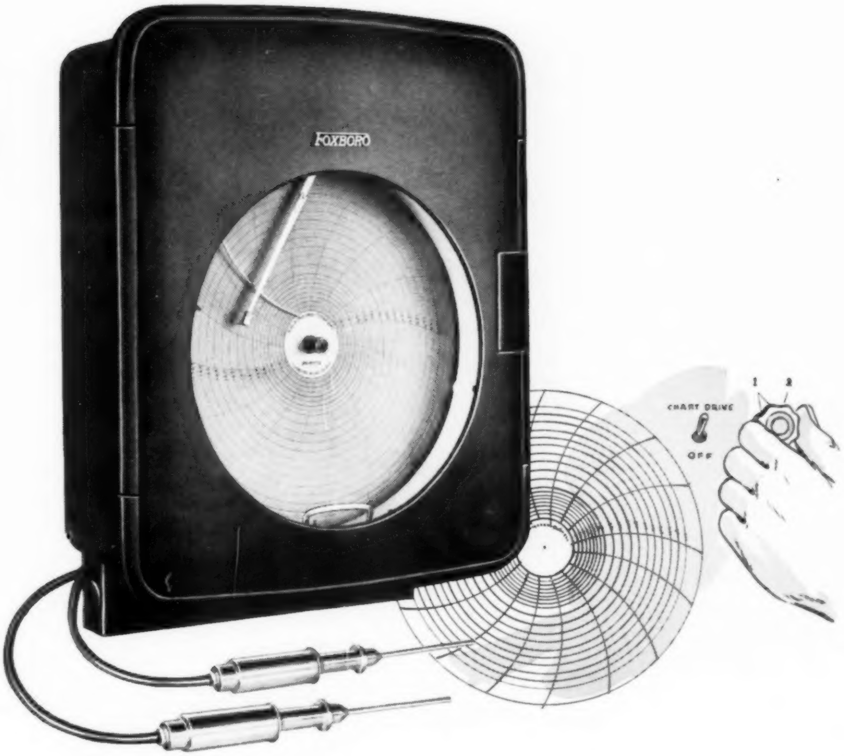
Organization for Allocation

Allocation operations in the government are based on the Defense Production Act of last October. This act instructed the President to take the necessary steps to insure equitable and logical distribution of scarce materials. The President established the National Security Resources Board which operates on the policy making level and has overall supervision of production and allocation. This board works with many other agencies, particularly the Department of Commerce. The needs of the dairy industry are handled through the Department of Agriculture which is designated as the "claimant agency." Needs of the industry are the direct responsibility of the Department of Agriculture. These needs are presented to the National Production Agency in the Department of Commerce which is called the "operating agency." If there is an irreconcilable difference of opinion among various claimants the National Security Resources Board exercises its authority.

Presentation of the dairy industry's needs to the appropriate government officials has been done most effectively through various trade organizations. The Dairy Industry Committee, which is supported by seven of the largest national dairy products organizations, has had a Task Committee at work on this for some time. In addition the Dairy Industry Supply Association has a committee that, while independent

(Please turn to Page 66)

HTST TIMING on the milk itself!



...with turn-of-a-knob simplicity and high sustained accuracy

Here's a new, simple method for accurately measuring and recording holding time during high temperature short time milk pasteurization. It has been developed to fill a long-time need for a quick, reliable check that avoids plant shut-down, after-hour work and burdensome expense. Featuring the new Foxboro Timer, it offers many important advantages including:

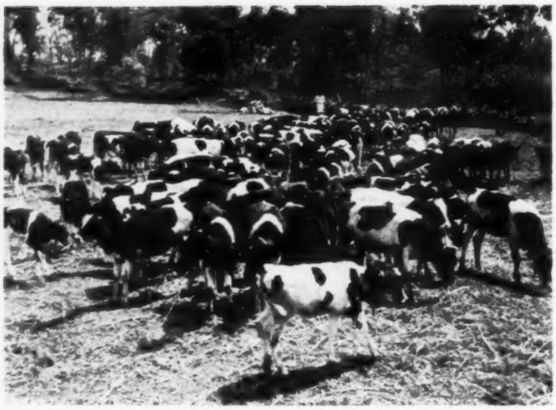
- Holding time taken on actual milk for maximum accuracy
- Timing test can be made at any time without preliminary preparation
- No interruption of pasteurizer operation during timing test
- Less than 30 seconds required for test
- Test can be made by one man. Little skill required
- Highest sustained accuracy
- Accuracy of timing entirely unaffected by lag
- Timer makes permanent chart record of test available to health authorities
- Instrument requires practically no maintenance

Write for bulletin 433. **The Foxboro Co., 266 Neponset Avenue, Foxboro, Mass., U.S.A.**

FOXBORO
REG. U. S. PAT. OFF.

INSTRUMENTS for the Dairy Industry

XUM



The big black and white cows show the Dutch influence in the young Indonesian Dairy Industry. These cattle are on a farm in Bandoeng on the island of Java.

The ancient ritual of harvesting milk is the same the world over. Modern milking equipment is still scarce in the island republic and will probably remain scarce until more settled times.

THE DAIRY BUSINESS COMES

THE REPUBLIC of Indonesia is a sprawling conglomeration of more than a thousand islands including such South Sea giants as Java, Sumatra, and part of Borneo. Rounding out the territorial possessions of the Republic are the Celebes, the Moluccas, and the lesser Sunda Islands, plus hundreds of tiny islands jutting from the surrounding seas. The new Republic had a hard time getting organized. So did its dairy industry.

Though the islands as a group are one of the world's most densely populated areas communication is wretched, in some places no more than a path a foot wide in the jungle. Boats still provide the best means of transportation.

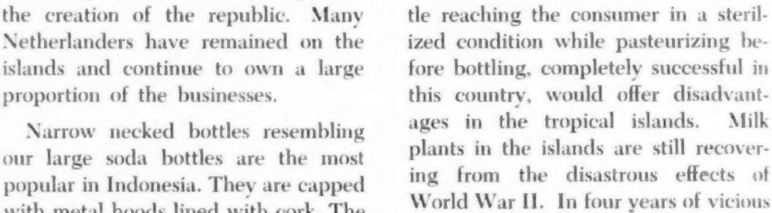
As in every new government since the beginning of time things are somewhat unsettled. Political factions are constantly striving to gain a more favorable position. The overall situation is far from conducive to normal business activity. Labor presents another problem. Most Indonesians are not used to machinery. Not being familiar with it Indonesians are understandably slow to appreciate the necessity of handing machinery carefully. The situation is improving as more and more people are being trained, but it is nevertheless a constant headache.

Production methods are different than those familiar to American dairymen. They resemble methods used in Europe, particularly those of the Dutch. This is natural, since the Netherlands governed Indonesia up until the creation of the republic. Many Netherlanders have remained on the islands and continue to own a large proportion of the businesses.

Narrow necked bottles resembling our large soda bottles are the most popular in Indonesia. They are capped with metal hoods lined with cork. The caps themselves do not look very much like those used for milk in this country.

Pasteurization follows the Dutch method of bottling first and pasteurizing the full bottles. This is advantageous because it insures the sealed bottle reaching the consumer in a sterilized condition while pasteurizing before bottling, completely successful in this country, would offer disadvantages in the tropical islands. Milk plants in the islands are still recovering from the disastrous effects of World War II. In four years of vicious fighting the islands suffered heavily.

Most of the major action took place



This is the pasteurization department in a Bandoeng dairy. Stainless steel and wide mouthed bottles are lacking. Note the bare feet on the man in the white uniform.

XUM

The small tops on bottles used in Indonesia are sealed with a cap not unlike those used on soft drinks in the United States. This is the bottle filler.

The bottle capping operation is a manual proposition. Operator must take the bottle from the conveyor, place it in position on the capping machine and cap by hand.

TO INDONESIA

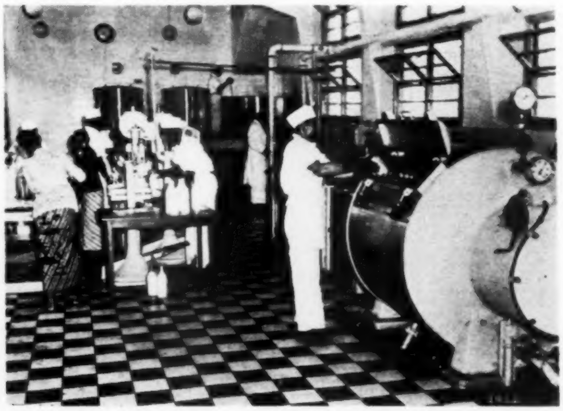
By ARCH ROLAND

around the larger cities, where the bulk of the dairy plants were located. Some of the plants suffered complete destruction while others were heavily damaged. Almost no plant escaped damage of some sort. This alone set the industry back several years.

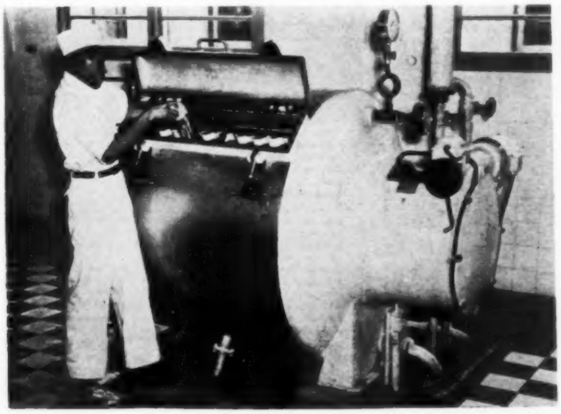
In the expansion since the war the plants have been concentrating on better sources of supply. Artificial insemination is being tried on a large scale while many new strains of cattle have been imported from Australia and the U. S. Prewar dairy herds were often inadequate sources and even in the best regulated ones quality was far from assured. The present concentration on herd improvement is one of the major accomplishments of the industry.

New equipment is being imported slowly but a shortage will be felt for a number of years. Since most of the dairies used European type machinery they are limited in the equipment they can purchase. This has thrown an added burden on manufacturers in Europe who have been hard pressed to supply the domestic demand under their limited quotas.

What will happen in the next two years will tell the story. If the industry can keep increasing production and maintain quality at the same time the chances are that Indonesia will have a dairy industry to which the new nation can point with pride.



This dairy is a spick and span enterprise. The floor appears to consist of linoleum or possibly colored tile. Machine at lower right is a sterilizing machine.



A close-up of the sterilizing equipment. Milk is pasteurized in the bottle as this picture illustrates. Use of European equipment is characteristic of this nation lately under Dutch rule.

XUM

1900
Muller's
GOLDEN ANNIVERSARY
1950

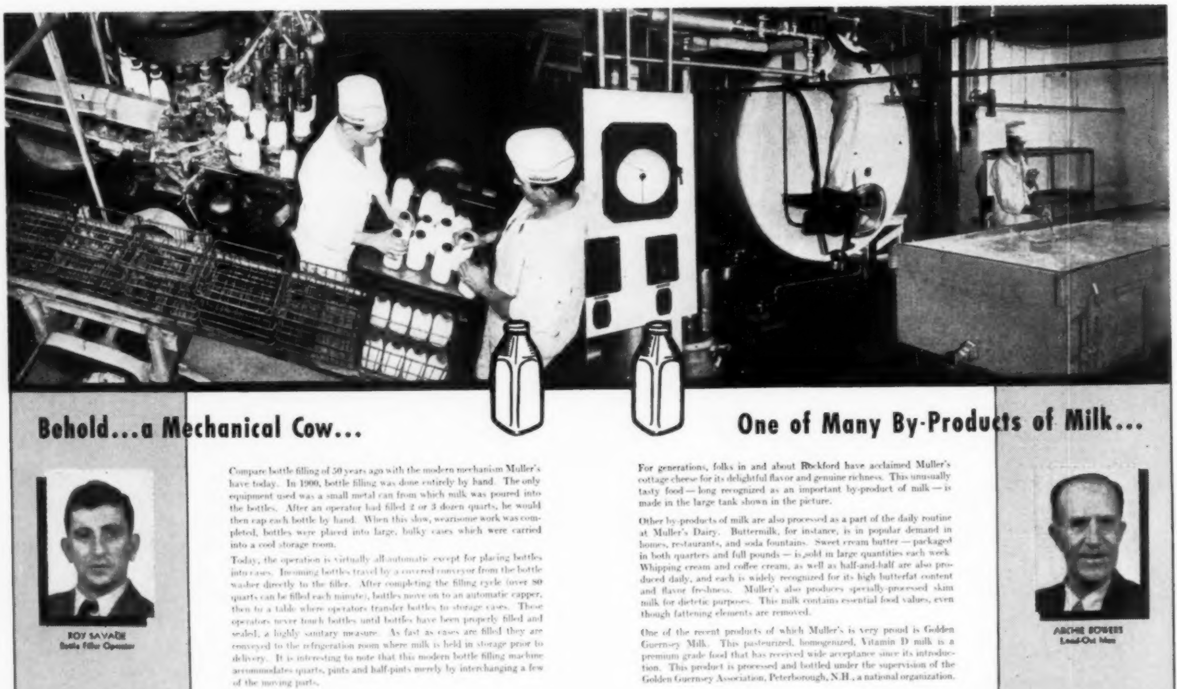
THERE is, in Rockford, Illinois, a milk company known as Muller's Dairy. The firm has just published a fiftieth anniversary booklet and it is a corker. Dedicated to "our five generations of customers" the booklet tells in simple, intimate terms the remarkable story of the complex organization that stands behind a bottle of milk. It is a superb job of customer and employee relations.

People in Rockford have known Muller's for half a century. They have watched it grow from a one route enterprise with a horse drawn wagon to its present modern plant and fleet of thirty trucks. The booklet is a tribute to the customers and to the company, for both played a part in creating the story.

The key to the book is people. The dairy is taken out of the category of a large impersonal concern and shown as a living thing made up of individuals. The pasteurizer

A Real Promotional Piece

By HUGH ROBINSON



Behold...a Mechanical Cow...

Compare bottle filling of 50 years ago with the modern mechanism Muller's have today. In 1900, bottle filling was done entirely by hand. The only equipment used was a small metal can from which milk was poured into the bottles. After an operator had filled 2 or 3 dozen quarts, he would then cap each bottle by hand. When this slow, wearisome work was completed, bottles were placed into large, bulky cases which were carried into a cool storage room.

Today, the operation is virtually all-automatic except for placing bottles into cases. Incoming bottles travel by a covered conveyor from the bottle washer directly to the filler. After completing the filling cycle (over 80 quarts can be filled each minute), bottles move on to an automatic capper, then to a table where operators transfer bottles to storage cases. These operators never touch bottles until bottles have been properly filled and sealed, a highly sanitary measure. As fast as cases are filled they are conveyed to the refrigeration room where milk is held in storage prior to delivery. It is interesting to note that this modern bottle filling machine accommodates quarts, pints and half-pints merely by interchanging a few of the moving parts.

ROY SAVAGE
Bottle Filler Operator

One of Many By-Products of Milk...

For generations, folks in and about Rockford have acclaimed Muller's cottage cheese for its delightful flavor and genuine richness. This unusually tasty food — long recognized as an important by-product of milk — is made in the large tank shown in the picture.

Other by-products of milk are also processed as a part of the daily routine at Muller's Dairy. Buttermilk, for instance, is in popular demand in homes, restaurants, and soda fountains. Sweet cream butter — packaged in both quarters and full pounds — is sold in large quantities each week. Whipping cream and coffee cream, as well as half-and-half are also produced daily, and each is widely recognized for its high butterfat content and flavor freshness. Muller's also produces specially-processed skim milk for dietetic purposes. This milk contains essential food values, even though fattening elements are removed.

One of the recent products of which Muller's is very proud is Golden Guernsey Milk. This pasteurized, homogenized, Vitamin D milk is a premium grade food that has received wide acceptance since its introduction. This product is processed and bottled under the supervision of the Golden Guernsey Association, Peterborough, N.H., a national organization.

ARCHIE BOWERS
Lead-Out Man

This picture of two pages in the Muller booklet illustrate the method of expressing the machine and the man concept that makes the book what it is. In reality the gray portion surrounding the text is yellow while the heavy black lines are brown.

is more than just a machine, it is a machine and a man, both of vital importance to Muller customers. Customers are introduced to the man who operates the can washer and to the switchboard operator. They meet the janitor as well as the boss. They even get to know "Philip," the horse who pulled the first wagon on the first route. It is this emphasis on people, on friends, on neighborliness that gives the book its power and appeal.

Most books of this nature carry pictures of the top brass and then pay lip service to the real story that lies in the plant and on the routes. This book does the thing the right way. Customers are taken into the plant and shown by an excellent series of pictures the fascinating business of processing fluid milk. A certain romance is given to the story through a happy choice of captions for the pictures. "It's a Long Way From Cow to Bottle," "Continuous Testing Assures Quality," "Behold—A Mechanical Cow" are some of the titles that are employed. The page entitled "Milk Fresh From the Farm" is a good example. Here a fine picture, covering the top half of the page, shows an operator dumping the milk and loading the cans into a can washer. Dorsel Upshaw is the name of the operator. He is a good looking man who suggests that quality and character that milk distributing firms endeavor to establish as a characteristic of their product. His portrait appears just below the big photograph of the machine. The nature of the operation, its significance, how it has been changed and improved through the years are described. But the important point is that by identifying the operator, by printing a portrait of him, the story becomes something that is alive. Through this simple device the book offsets the mechanical character which too often is the main characteristic of efforts of this type. Indeed the personality idea might have been carried a step further by mentioning the operator's name in the text. This is a small matter, but it probably would have added just another little touch to what Muller's was trying to do.

THEY GO FOR MILK

Boys' Life, the national boys' magazine, published by the Boy Scouts of America, reports the findings of its 1950 reader survey with regard to beverages.

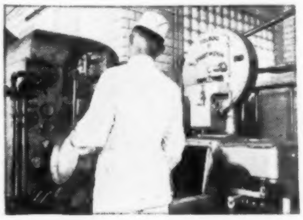
As expected, 96.4% of its boy readers drink milk, with cocoa second in preference, favored by 62.8% of boys. Tea ranks third with 42.2% and coffee trails in fourth place with 20.4%. Very significant is the percentage of boys (6.2%) who drink Postum, generally considered an adult beverage.

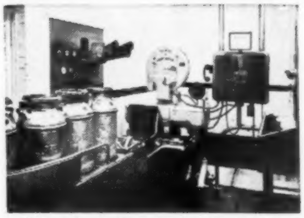
Other pages feature Joe Andrews, in charge of pasteurizing; Bob Swearingen, the Plant Supervisor and the man in the laboratory who is the customers' guarantee of quality; Roy Wollitz, who operates the bottle washer; Archie Bowers, load-out man and expert on cottage cheese; Roy Savage, bottle filler operator, are all included in the booklet. A separate page is devoted to each man and to each operation. The text that accompanies the pictures explains the function of the equipment and the function of the man who operates it. The refrigerator room and the refrigerator man, the boiler room and the maintenance

TOLEDO
NO SPRINGS
HONEST WEIGHT
PRINTWEIGH
It's Profit You're Weighing
PRINTED WEIGHT
WEIGHT
363

PRINTWEIGH STOPS ERRORS

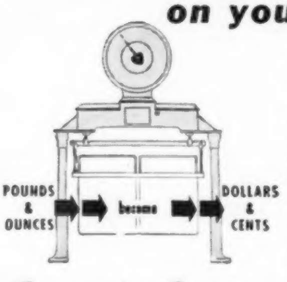
For closer cost control in your milk plant — Toledo Printweigh Scales provide printed weight records . . . assure you that the accurate indication of the Toledo dial will reach your accounting records without chance of human error. Prints big, clear figures . . . on thick tickets . . . on large or small sheets . . . on strips . . . with extra copies. Saves time, stops losses for milk receiving and other dairy weighing operations. Send for bulletin 2021 on modern weight control. Toledo Scale Company, Toledo 1, Ohio.





Printed weights assure accurate milk receiving records.

MILK becomes MONEY on your SCALES!



Errors made at the scale stay wrong forever. There is no chance to recheck; either because the milk (or other dairy product) has been shipped or has lost its identity in the general stock. You've got to be *right*—weigh it right—Toledo Printweigh means *accurate* weights *accurately* recorded!

Guard Costs with

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All the Way

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MODEL
No. 840

Now! 7 models
from ½ pt. to 2 qt.

The new Model No. 840 for the oblong 2 quart bottle (shown above) matches in every way the superb qualities of all Erickson Aluminum Milk Cases, the biggest DOLLAR SAVING pieces of equipment on the Dairy market today.

It's the YEAR-END PROFIT TOTAL that counts!

Manufactured by
C. E. ERICKSON CO., INC.
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Sold Exclusively by
REYNOLDS METALS COMPANY
RICHMOND, VIRGINIA

operation is tied in with the individual who performs it. The net result is a compact story of a team made up of men and machines, constantly achieving the remarkable feat of gathering, processing, and distributing thousands of quarts of milk every 24 hours. The individual is given a dignity and the work an importance that must be a source of pride to the employee and a source of confidence to the customer.

Presenting the Routemen

Possibly the most remarkable part of the book consists of a large photograph that extends across two pages. This picture shows the Muller fleet of today, which stands in vivid contrast to a picture of the horse and wagon fleet of 1925 that appears immediately below. Implementing this striking display are two subsequent pages that show the photographs of all the routemen. Each routeman is designated by his name and the territory that he covers. These particular pages are extremely smooth pieces of work. The personalizing touch that was used in connection with the mechanical operations is again used. In this case, however, it has added power because the customer presumably knows the milkman who serves the area in which he happens to reside. The reaction, nine times out of ten, will be the reaction of a friend who recognizes a friend. Why do highschool year books have such an appeal to the students and friends of the students? It is because, in a more or less mechanical world where people are hungry for recognition of their own particular achievements, recognition is given. By this simple process of printing a man's picture, the bond between customer and routeman is strengthened as well as the bond between routeman and company. This is good business. Friends have a tendency to chat when they meet. It is a relatively easy matter for the skillful route salesman to introduce his products into such a conversation. This friendliness between customer and routeman is the very essence of sound relationship.

The book is put together in an attractive manner. Photographs are good. Effective use is made of simple line sketches. These sketches deal with scenes both in and out of the plant. Three colors—black, yellow and brown, prove to be an effective combination that gives cleanliness and sparkle to the entire piece.

While the customer angle was probably the major idea behind publication of the book, a secondary result most certainly will stem from its creation. The importance given to the people of Muller's Dairy is a slick job of good employee morale building as one is likely to see. Of course publication of this book does not guarantee that Muller's will enjoy good labor relations from now until the end of time, but it certainly must be a source of pride to the employees and an extremely vigorous step along the road of labor-management understanding.

It is remarkable what can be accomplished with a few pictures and a few words when handled intelligently. One gets the impression that after serving five generations of customers, the people in charge of Muller's Dairy have learned a great deal and have profited by what they have learned. The book is a mighty good lesson in practical customer and labor relations.

people, the garage and the fleet supervisor, the office and the cashier are presented by words and pictures. Each

ACCIDENTS REPRESENT WASTE

Training Program for Drivers Outlined by Safety Expert at Milk Industry Foundation Convention

"MARVELOUS ACCOMPLISHMENTS have resulted in the past quarter-century in the handling and distribution of America's most widely used food – milk," according to Prof. Amos E. Neyhart of the Institute of Public Safety at Penn State College, a speaker at the Milk Industry Foundation convention in Atlantic City.

"Incredible heights have been reached by members of the Milk Industry Foundation," he said, "and facts and figures emphasize the vital part that distributors play. You deliver sixty million quarts of fresh milk and cream daily to consumers through doorstep and store deliveries, operate 190,000 motor vehicles in transporting milk and dairy products from farms to plants, and plants to consumers. This is more motor vehicles than are used for the distribution of any other commodity.

"You are an indispensable segment of a business from which the public has come to expect convenient, dependable service and your system of efficient, low-cost distribution sets a standard for the world.

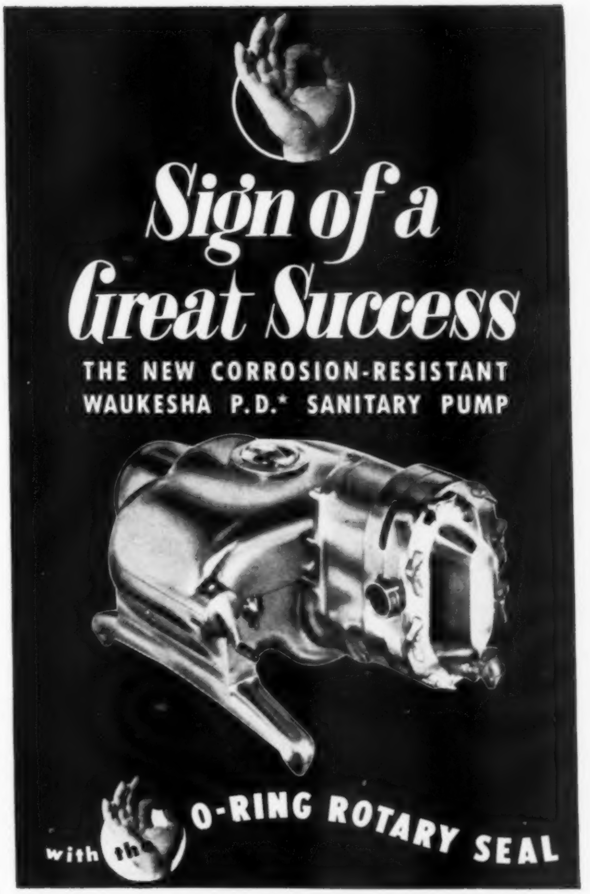
"Too few managements study costs of accidents. Approximately $115 is the average cost of a motor vehicle accident, large or small. Out of this amount, the insurance carrier pays about $80, the legal liability for personal injury and property damage. The remaining $35, which is merely an average figure, represents the uninsured portion of the bill.

"Accidents represent real waste. They not only cost money from the standpoints of actual expenditures, and indirect losses, but there are intangibles–the cost of which often cannot be estimated. The loss of a customer, the loss of public goodwill, additional advertising that might be necessary, deterioration in employee relations, and even the loss from injury or death of a good employee, are intangibles.

"No fleet operator can afford to have a bad representative who indulges in 'cowboy' driving and reckless disregard for others. Your company's hidden investment in drivers is one of the vital elements influencing your costs. The hidden cost of improperly selected and improperly trained drivers causes excessive losses and loss of company good will through the absence of courtesy.

"In the interest of developing better driving, greater safety and expert care of vehicles, and to cut high cost of driver-turnover, sixteen 'tools of selection' have been developed to help select drivers who will make good.

"Training is provided at leading colleges and universities. Some 30 colleges each year offer one-week training courses under the general sponsorship of the National Advisory Committee for Fleet Supervisor Training. Since 1939, a total of some 5,000 supervisors have attended courses. They are responsible for upward of a million drivers."


Sign of a Great Success
THE NEW CORROSION-RESISTANT WAUKESHA P.D.* SANITARY PUMP
with the O-RING ROTARY SEAL

Streamlined, compact new WAUKESHA SHIFTSPEED PUMP. Has handy handwheel speed adjustment, high speed stop, new O-Ring Rotary Seal and adjustable legs.

You get new PLUS VALUES in sanitary pumps now with the new Waukesha . . . new time-saving sanitation, new performance, new durability, new beauty! The Waukesha O-RING ROTARY SEAL *alone* puts it head and shoulders ahead of others. With only ONE ring replacing SIX former parts you'll save substantially on cleaning, disassembly and assembly time. You need never consider painting or refinishing, for the New Waukesha Pumps are made *entirely* of gleaming, polished "Waukesha Metal"— a lifetime finish, easily cleaned, corrosion-resistant, tarnish-proof. Installation is simpler, too! The new steel plate base with easily adjustable legs can be leveled to uneven floors in a jiffy.

When you get all this — plus the time-proven advantages of Waukesha's P.D. Positive Displacement, non-aerating, non-agitating pumping — it's modern product-handling that really pays a profit on your investment. Write for the whole story TODAY.

* P.D. means Positive Displacement to the last drop.

New WAUKESHA Pumps are available in V-Belt, Variable Speed and Vented types.

WAUKESHA FOUNDRY CO.
WAUKESHA, WISCONSIN

Waukesha 100% SANITARY PUMPS
Dependable Product of a Responsible Manufacturer

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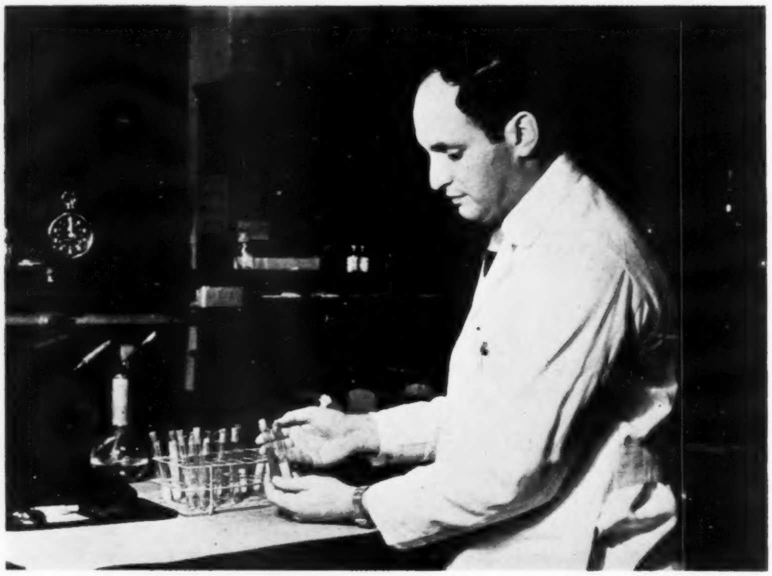

Dr. Stoltz, co-author of this article on detecting antibiotics, made extensive use of the phosphatase test in his work. Usefulness of this test may be impaired if sufficiently high levels of antibiotics are present.

A Test for the Detection of Antibiotics in Milk

By E. I. STOLTZ and D. J. HANKINSON

University of Massachusetts

IN RECENT MONTHS it has come to the attention of dairy manufacturers that the indiscriminate use of antibiotics for the treatment of mastitis presents serious problems. The antibiotics later find their way into the milk supply and retard the activity of lactic acid "starter" cultures used in manufacturing certain dairy products. Difficulties have been reported in the manufacture of cheddar cheese, cottage cheese, and artificial buttermilk. In many cases losses of entire batches have resulted. There is need for a satisfactory test for detecting milk containing antibiotics. The starter activity tests (11- 15-) are not specific for antibiotics and require several hours for completion. The microbiological assay technics (13) are not adapted for use in a dairy plant laboratory. With these difficulties in mind, a more useful test was sought for detecting the presence of antibiotics. Such a test should be rapid, accurate, simple and inexpensive. It is believed that the procedure here reported fulfills these requirements.

Principle of Test

The test for the detection of antibiotics in raw milk is based upon the principle that the activity of the phosphatase enzyme in milk is retarded in the presence of the antibiotics. The Scharer field test was modified by reducing the size of the raw milk sample in order to measure accurately enzyme activity of raw milk. The results reported herein are preliminary findings. Further work will be necessary to establish limitations of the method.

Several reports in the literature tell of inhibition by antibiotics of enzyme systems in bacterial cells and body tissues. Pratt and Dufrenoy (13) (14) indicate that penicillin and streptomycin inhibit the action of bacterial phosphatase. Dufrenoy and Pratt (4) in another article state that the inhibition of phosphatase occurs at a penicillin concentration of 0.001 – 0.01 unit per ml. and that the concentration of penicillin encountered in therapeutic practice inhibits the activity of bacterial phosphatase. On the other hand, Bayliss, Glick and Siem (1), also working on this same general problem, came to the conclusion that penicillin which inhibited the growth of the organism had no effect on the phosphatase activities of the bacterial cells.

Dubos (8) notes that gramicidin, one of the crystalline components of tyro-thricin, inhibits the phosphorylative changes that normally go on as a result of glucose breakdown. Loomis (12) reported that aureomycin essentially does the same thing.

Description of Test

The principal modification of the Scharer field test was the reduction in quantity of raw milk sample. One drop (.05 ml.) was found to give a deep blue color from normal raw milk and absence of color when sufficient concentration of antibiotic was present in the raw milk Because of the small quantity of milk present, it is not necessary to extract with butyl alcohol. The test tube contents are nearly water-clear which facilitates color estimation.

Procedure

The solutions are prepared according to directions accompanying the test kit. The test on the suspected sample is performed as follows:

1. Fill test tube to the 5.0 ml. mark with buffered substrate.
2. Add one (1) drop (0.05 ml.) of milk to be tested to the substrate. Make up to next marking (5.5 ml.) with phenol-free distilled water. Mix well by inverting the tube several times.
3. Incubate the sample for 10 minutes at 98° F. (37°C.).
4. Add 6 drops of indicator solution and quickly mix the sample by inverting the tube several times.
5. Let the sample stand for a maximum time of 10 minutes for the development of color.
6. A "positive" control sample using raw milk free from antibiotics should be tested concurrently with the unknown sample for color comparison. A "negative" control sample should likewise be tested to insure that solutions and glassware contain no free phenol.
7. Compare unknown sample with control sample and observe color differences.

Interpretation

The observed colors are interpreted as follows:

1. Blue color indicates that there has been no inactivation of the phosphatase enzyme by antibiotics. Such milk may be used for the manufacture of dairy products in which bacterial growth is essential.
2. Green color indicates partial phosphatase inactivation which may be duė to the presence of antibiotics in the milk. Such milk should not be used for products employing bacteria, for the

Table 1

PHOSPHATASE TEST ON MILK FROM COWS TREATED WITH ANTIBIOTICS

Cow No.	Antiobiotic	Dosage	No. of Milkings after treatment(1)	Results
1	Aureomycin	200 mgm	4	Gray Complete inactivation
2	Streptomycin	1 gm	2	Gray Complete inactivation
3	Tyrothricin	40 mgm	2	Pale green Partial inactivation
4	Penicillin	75,000 units	2	Gray Complete inactivation
5	Penicillin	75,000 units	2	Gray Complete inactivation
6	Penicillin	25,000 units	1	Gray Complete inactivation
7	Penicillin	25,000 units	1	Green Partial inactivation

(1) Twice-a-day milking.

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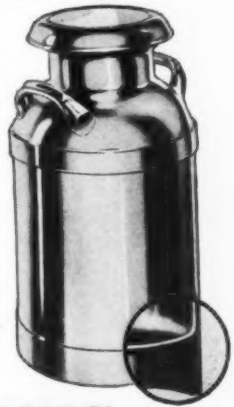

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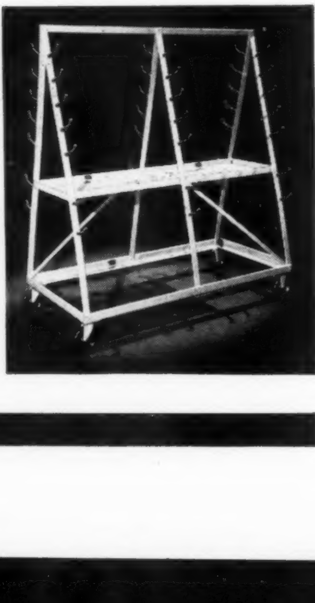

antibiotic concentration is likely to inhibit the growth of lactic acid bacteria.

3. Gray color indicates complete phosphatase inactivation and this milk should definitely not be used to manufacture dairy products employing bacteria.

Results

Treatment of Animals

Cows which had mastitis were given therapeutic treatment immediately after milking with one of the following antibiotics; aureomycin hydrochloride ointment, penicillin ointment (Veticillin), streptomycin (CaCl complex) and tyrothricin. The samples were taken just before the milk was poured into the strainer. The results are shown in Table 1. In all trials the antibiotic was easily detected.

With only one exception (Cow No. 2), the samples were taken from the complete milking. In this trial the cow was treated with streptomycin in one quarter only and the milk was taken from the other three normal quarters. The results of this trial are significant in that the milk from the untreated quarters showed phosphatase inhibition. Hansen (5) reported that antibiotics do not diffuse from one quarter to another. On this basis the antibiotic in the treated quarter may have entered the blood stream and in some manner influenced the phosphatase secretion in the other quarters.

Detection of Concentration Showing Starter Inhibition

Table 2 shows the levels of antibiotics reported by different investigators to give starter inhibition. Experiments showed that extremely low levels of antibiotics could be detected in milk with the modified phosphatase test. Varying amounts of penicillin, aureomycin, streptomycin, and tyrothricin were added directly to the milk to give known concentrations. The manufacturer's statement of antibiotic content of each preparation was used as the basis for determining the concentration in the milk. Table 3 shows the lower levels of antibiotic at which definite inactivation of phosphatase was identified. It is possible that even lower levels can be measured. In all cases these levels were well below those found to inhibit starter activity as reported in the literature.

Antibiotics have been shown to possess phosphatase inactivating properties. The Scharer field phosphatase test appears to have promise in detecting the presence

Table 2
CONCENTRATIONS OF ANTIBIOTICS SHOWING STARTER INHIBITION

Investigator	Product Observed	Antibiotic	Inhibitory Concentration per ml.
Doan (3)	Starter	Penicillin	0.05 unit
Hargrove et al (6)	Swiss Cheese Starter:		
	S. thermophilus	Penicillin	0.01 unit
		Streptomycin	5 milligrams
	L. bulgaricus	Penicillin	0.1 unit
		Streptomycin	1 milligram
	P. shermanii	Penicillin	0.1 unit
		Streptomycin	5 milligrams
Hunter (7)	Cheddar Cheese Starter:		
	S. cremoris	Penicillin	0.07 unit
	S. lactis	Penicillin	0.17 unit
Katznelson & Hood (9)	Starter	Penicillin	0.05 unit
Kreinke (10)	Starter	Aureomycin	0.5 microgram
Bradfield (2)	Starter	Aureomycin	0.25 microgram

of antibiotics in raw milk. The procedure as described will readily detect extremely low levels of antibiotics when the drug is added directly to the milk. Likewise the antibiotics could be detected in the milk from cows treated for mastitis. Research work is in progress to determine the period of time during which inhibition occurs after administering the drug to the animal. The physiological response in the animal after treatment may affect the secretion of phosphatase in the milk in a different manner from the effect of direct addition of the drug to the milk. It is felt that the test can be used to screen out milk supplies containing antibiotics, thus permitting the use of antibiotic-free milk for dairy products manufactured with bacterial cultures.

It is suggested that the usefulness of the phosphatase test for detecting improperly pasteurized milk may be impaired if sufficiently high levels of antibiotic are present. In other words, a slight amount of antibiotic in combination with sub-standard pasteurizing conditions may yield a false negative phosphatase test. No results are available on this problem as yet.

This is a preliminary report. It is hoped that the information may be of value to those manufacturers who are troubled with antibiotics in milk. Further studies are being made to obtain more information concerning the usefulness of this method.

Table 3

LOWER LEVELS OF ANTIBIOTIC WHICH SHOW PHOSPHATASE INACTIVATION

Antibiotic	Level per ml.	Results
Penicillin	0.01 unit	Light green Partial inactivation
Streptomycin	0.01 milligram	Light green Partial inactivation
Aureomycin	0.01 microgram	Light green Partial inactivation
Tyrothricin	0.01 milligram	Light green Partial inactivation

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SALT STUDIES WITH DAIRY CATTLE

Cornell University Research Probes Dietary Requirements of Cows—Hay Quality, Roughage Utilization Investigated

PROF. S. E. SMITH reported on Cornell studies relating to salt feeding of dairy cattle. In one experiment it was found that cows showed no preference for loose salt over block salt, consuming as much of one as the other. All cows were on pasture, but one group was allowed free access to block salt and the other to loose salt.

In another test, to determine maximum salt intake consistent with good health and performance, 10 milking cows were fed recommended barn-feeding rations and, in addition, salt at levels up to 400 gms. (0.9 lbs.) per cow daily. This salt was mixed in the daily concentrate allotment. It was learned that for a period of at least 8 weeks dairy cows will consume 200 gms. (0.45 lbs.) of salt per day with no harmful effects. However, 400 gms. of salt per head daily was not tolerated, and cows went off feed in 1 to 13 days. The chloride content of milk or blood plasma was not altered with intakes as high as 200 gms. of salt per day, but the urinary output of chlorides rose considerably.

Professor Smith also reported on an experiment to reinvestigate the salt requirement for lactation and also the symptoms of a severe salt deficiency. The study is still in progress and a final report is not possible.

Roughage Utilization by Ruminants

Prof. Wise Burroughs of the department of animal science, Ohio State University, reported on "Roughage Utilization by Ruminants as Influenced by Dietary Constituents Upon Rumen Microflora."

The efficiency with which hays, fodders, pastures, and other roughages are utilized by ruminants is important in the economic production of milk, beef, and other animal products, he said. There are two ways to get additional feeding value out of forages. One involves growing higher quality forages, and the other pertains to animal physiology —primarily the activities of microorganisms in the rumen or paunch of cud-chewing animals. Ohio scientists are studying the latter method to see if poor quality roughages, constituting a large proportion of today's cattle and sheep feeds, can be better utilized.

Among the findings, so far:

Rumen microorganisms have protein requirements that must be supplied in the ruminant's ration if roughages are to be digested efficiently.

Adding starch or starchy grains had different influences on the digestion of different roughages. With poor quality roughages, such as corn cobs or mature timothy hay, starch materially depressed roughage digestion. Adding starch to good quality roughage, such as alfalfa hay, did not depress roughage utilization.

It was found that adding alfalfa extract and alfalfa ash to poor quality roughage was an aid to roughage digestion. Also, that cobalt is probably a rumen bacterial mineral nutrient.

A new tool in ruminant nutrition was developed which promises to provide more useful information in the future. This is an artificial rumen, which is charged with rumen bacteria taken directly from the stomach of a cow. Various feeds eaten by cattle are introduced into and withdrawn from it at daily intervals of time. Changes taking place in feeds brought about by rumen microorganisms, including the digestion of roughages, can thus be studied, as well as the nutrients needed by rumen bacteria.

Good bacterial nutrition means good roughage digestion, said Professor Burroughs. Poor bacterial nutrition results in poor roughage utilization.

Hay Quality on New York Farms

Prof. J. D. Burke of Cornell reported results of a two-year survey of the kind and quality of hay produced and fed on New York farms. The survey covered three widely separated counties and 129 other farms picked at random. Favorable hay-making weather prevailed one year and unfavorable weather the other.

Among the results:

More than half of the hay samples were predominantly timothy or grass mixtures and contained 10 per cent or less legumes. But the total of 1,322 samples of hay studied had an average of 21 per cent legumes. First cutting averaged 18 per cent legumes compared to 53 per cent for second cutting.

There was a definite correlation between legume content and grade. The 211 samples of second cutting hay were superior in protein, calcium, phosphorus, carotene, green color, and grade. About 24 per cent of all samples graded US No. 1; 43 per cent US No. 2; 19 per cent US No. 3; and 14 per cent, US Sample grade.

Grades of hay were not very reliable as a measure of hay quality as estimated by chemical composition. Hay that grades US Sample because of weeds or mold was similar to US No. 1 or 2 in chemical composition.

Late cut hays showed a significant decrease in nitrogen, calcium, cobalt, carotene, green color, and grade, and an increase in lignin. Stage of maturity was much superior to grades as an index of chemical composition.

There was little or no relationship between vitamin D content and class or grade. Likewise vitamin D was cor-

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From the New York State Colleges of Agriculture and Home Economics Acts of Congress of May 8 and June 30, 1914. L. R. Simons, Dir. of Exten.

related with legume content, time of cutting, length of storage, number of times rained on, carotene, or other measures used.

Carotene content of the hay samples averaged 11.2 parts per million and was positively related to color, grade, and per cent legumes. Rained-on hay was lower in carotene as was late-cut hay. Carotene losses increased with length of storage. Despite wide variations in carotene content, no carotene deficiency is likely to occur if sound feeding practices are followed, such as cows having access to pasture in summer and young calves and dry cows being fed the better quality hays.

WISCONSIN QUALITY STANDARDS

Reports from dairy plant fieldmen and operators indicate that the new Wisconsin milk quality standards, which went into effect just a year ago today, have resulted in a marked improvement in the quality of milk delivered to dairy plants.

In quoting these reports H. J. Weavers, chief of the dairy division of the state department of agriculture, pointed out that the new standards have not solved all of the problems of the Wisconsin dairy industry. But, he said, they have awakened a new realization of the importance of quality and definite progress is becoming more and more evident.

Here are a few typical quotations from a large number of statements by dairy fieldmen and plant operators:

"Quality is a lot better than it used to be."

"Milk has improved this year over last."

"Butter scores are improving."

"Cheese working better than ever. No trouble at all this year."

"Best sediments this year we have ever had."

"We have never had such good milk in the history of our company. Made the best cheese this year in the 35 years we have been in business."

"The effect of this program is quite evident in the improved quality of milk being delivered by our patrons."

Other accomplishments during the past year, Weavers said, include doubling the number of covered milk trucks, rapid increase in milk house construction, improved farm conditions, and a marked improvement in the general level of milk quality.

Calcium, phosphorus and cobalt contents were related closely to the legume content. Late cut hays were lower in cobalt than were early cut hays.

Methods of handling did not appear to have any effect on chemical composition of the hay. However, hay put up with the long hay blower graded highest (1.6) and hay put up with the pickup baler graded lowest (2.5). Mow cured hay was higher than field cured hay only in color and grade but not in chemical composition.

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SEALRIGHT CONTEST WINNERS

Winners of the third and final 1950 Sealright Eye-dentification and milk bottle sanitary protection idea contest are: Mrs. George J. Close, New Lenox, Ill.; Mrs. H. M. Gorsline, Indianapolis; Mrs. David W. Patterson, Berwyn, Pa.; A. Jakubowski, Wilmington, Del.; Evelyn Sowolla, Maple Heights, Ohio; Rena B. Carlough, Milford, Conn.; Hallie Brown, Decatur, Ill.; Mrs. Arnold Vincent, Lake Charles, La.; Miss Barbara Tilley, Greenville, N. C.; Dorothy C. Kuhn, Gloversville, N. Y.

The sanitary protection idea contest have been sponsored nationally by Sealright Co., Inc. for its milk bottle hooding process and locally by the dairies using the hooding process. In the three contests which ran from May through September there have been 30 winners for Eye-dentification of a film star's eyes plus best statements on the importance of the sanitary protection of the pouring surface of the bottle of milk. The prizes have been major articles of household equipment such as electric furnaces, tape recording sets, electric kitchen ranges, sewing machines, etc.

The 30 winners of the preliminary contests have their entries being judged for the grand prize, a Packard automobile, to be awarded in December.

The dairies whose customers were winners of the third contest are: Weber Dairy, Joliet, Ill.; Greenfield Ice Cream Co., Greenfield, Ind.; Weaver's Dairy, Malvern, Pa.; West End Dairy, Wilmington, Del.; Kysilka Dairy, Cleveland, Ohio; Clover Dairy, Milford, Conn.; Kembrook Dairy, Decatur, Ill.; Guth Dairy, Lake Charles La.; Carolina Dairy Products Co., Greenville, N. C.; Quality Dairy Co., Gloversville, N. Y.

The judging in the Sealright Contests is done by R. L. Polk & Co., professional national contest judging firm of Chicago.

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EQUIPMENT OUTLOOK

(Continued from Page 52)

tee composed of four men, Harold W. Comfort, Bordens; Everett O. Haskell, Beatrice Food Co.; Vernon F. Hovey, General Ice Cream Corporation, and Philip G. Kinzer, Carnation Co., was formed at the request of the National Security Resources Board. This committee made a careful study of the dairy industry's requirements and submitted a confidential report to NSRB.

The general situation is one of much uncertainty with government agencies getting ready for business or sifting information in order to arrive at a sound understanding of the industry's needs. There is a scarcity of stainless steel and some other supplies. Department of Agriculture officials exhibited a point of view very sympathetic to the dairy industry which this correspondent took at its face value. I believe that they will do everything they can, within the frame work of the immense task that faces the nation, to see that the dairy industry gets as much materials it is possible to provide. Dairymen can help themselves and the nation immeasurably by working through their trade associations and by giving accurate realistic estimates of their needs. Finaly conservation and thrift should get the attention they merit.

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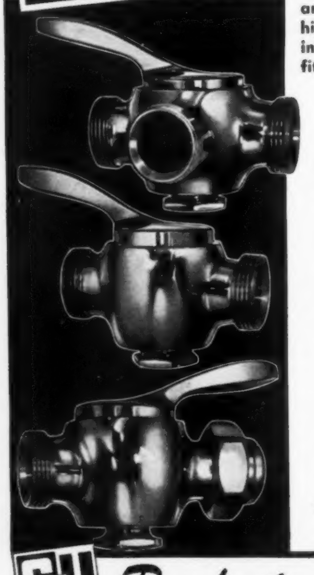

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The Morning's Mail

Editor
Milk Review
New York City

Dear Sirs:

I seldom get moved so much as to write an answer to a trade journal about one of its articles; but I am so in accord with some very pointed remarks made by the gentlemen who wrote the story on the recent dairy show that I cannot resist the temptation.

I first attended a dairy show in Cleveland in 1934 as a member of the Illinois student judging team and was lucky to win the ice cream award. Since that time I have been in attendance at several other meetings and have received untold good but the point is I could have had a great deal more good and would have enjoyed myself a great deal more had arrangements been made to allow those salesmen and those prospective customers who are not the guzzling type to have a few minutes together under conditions suitable for friends to be made and renewed without having to shake him awake or toss some cold water on him to get him sober enough to walk to his room.

I have spent many hours in my room and know others have too when I would dearly loved to have been with fellows who we could discuss our mutual problems with but there was no way to get together.

As a personal point I waited at least 30 minutes for an elevator, another 30 minutes in the hall and finally crowded part way into one room to try and give a firm an order for 200,000 ice cream cones but couldn't get a single man to take the order. Since I was leaving on an early train the next day he lost the order just because not a single man on the force would take the order, that was only 10:30 Wednesday night. I'm not against the drinking men, just sorry I couldn't meet more men and visit more with people with my same problems. In fact it is a pretty rough row to hoe for the average dairyman to attend a show or a convention for that matter and get much from it. He is pretty well left out unless he follows the crowd around the rooms.

Well, I feel better and next time I guess I'll be back along with a lot of the same fellows who I saw this year.

Sincerely,
PERRY F. PIPER.

This letter was written in response to the story of the Dairy Industry Exposition that appeared in the November issue of the "American Milk Review." The article said in part, " . . . it seems as though there must be some better method of adding spice to the great dairy exposition, some more solid ground for exhibitors to meet their customers and friends in relaxed moments than through a series of hotel rooms, filled with people drinking free liquor, smoking free cigarettes, drifting from party to party, vainly seeking something that doesn't exist . . . "

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OTHER MOJONNIER ENGINEERED PRODUCTS FOR THE DAIRY INDUSTRY: VACUUM PANS • ZONE-CONTROL VATS • MILK TESTERS • COMPACT COOLERS • TUBULAR HEATERS AND COOLERS EVAPORATORS • FILLERS • CASE WASHERS PRODUCERS COLD-WALL TANKS • CONVEYORS LABORATORY EQUIPMENT AND SUPPLIES

XUM

Fifteen Sales Facts For Dairy Products

National Dairy Council Compiles Valuable Nutritional Information As Selling Aid—Is Available to Industry

FIFTEEN PERTINENT FACTS useful in selling milk have been compiled by the National Dairy Council and made available to milk distributors throughout the nation. Such fundamental concepts as "adding milk to a breakfast of fruit, coffee, and roll is a simple, practical and effective means of improving the condition of breakfast to the body needs" and "the teen ager requires at least a quart and a half of milk each day to supply the calcium needed for growth" are typical of the type of material presented.

In giving this series of facts to the industry the National Dairy Council observes, it is possible to double the amount of milk and dairy products that customers are now consuming. "Nutrition scientists are agreed that young and old alike should be consuming daily about a quart of milk or its equivalent in butter, cheese, and ice cream," the Council says.

To sell dairy foods dairymen need significant pegs on which to hand advertising and publicity programs. These pegs or facts coming from the test tubes in top ranking colleges and universities throughout the country are constantly flowing to the National Dairy Council from where they get into the hands of the nation's influential leaders who shape the food habits of America's 152 million consumers.

Feel free to adapt these statements to your own needs in your sales campaigns, for the statements are all supported by findings from research, financed by the dairy industry.

1. Eating a breakfast containing an animal protein, such as milk, helps the body make better use of the proteins eaten during the rest of the day.
2. Adding milk to a breakfast of fruit, coffee, and roll, is a simple, practical and effective means of improving the contribution of breakfast to the body's needs.
3. A breakfast, ample in amount and including animal protein, such as milk, is effective in preventing mid-morning and afternoon tiredness, headache, hunger, and that "all-gone" feeling.
4. The vitamin D added to milk is beneficial. It aids calcium retention in adolescence even during the summer months when there is maximum sunshine.
5. The teen-ager requires at least a quart and a half of milk each day to supply the calcium needed for growth. Younger children should be given one quart of milk each day to prepare for the extra needs during adolescence.
6. Milk is the best source of calcium and contains the other minerals which combine with calcium to form bone.
7. The calcium and other nutrients in milk flavored with chocolate are as well used by the human body as they are from unflavored milk.
8. Adults growing older should consume nearly a quart of milk daily or its equivalent in cheese and ice cream to meet the calcium requirements of the body.
9. Unless milk and milk products are included, in the diet of an older person, he will not receive all the nutrients his body needs, particularly calcium, protein and riboflavin. Nearly a quart of milk used daily as a beverage, combined with foods, or as cheese and ice cream, is needed to supply these nutrients.
10. Broken bones and stooped shoulders may be the result of loss of minerals. Milk contains a balanced source of minerals needed to maintain healthy strong bones. Taking calcium pills is not a substitute for drinking milk.
11. Ice cream contains riboflavin approximately 100% available to human beings. Riboflavin is as essential as air to the life and growth of body cells.
12. There is no evidence of unfavorable response to the coldness of ice cream even when eaten rapidly in large quantities by healthy young men, who participated in a study to test the physiological effects of the temperature of meals.
13. Milk, butter, cheese and ice cream are highly acceptable to children who will consume them

MILK
JUST MARRIED
PALAZZOLO

"BE RIGHT WITH YOU DEAR"

willingly in amounts equal to or in excess of recommended dietary patterns.

14. Dairy products, consumed by children in recommended amounts, supply sufficient calcium and riboflavin to meet the recommended daily dietary allowances of the National Research Council for these nutrients. They supply, in addition, half of the protein and Vitamin A and one-fourth of the thiamine specified by the dietary allowances.
15. Strong evidence exists that the resistance of human teeth to dental caries is partly influenced by the diet during the stages of development and growth. Milk provides nutritive essentials for the development and maintenance of sound tooth structure.

These statements gleaned from current research financed by the dairy industry have provided the basis for many sales promotion-public relations pieces, produced by the National Dairy Council, and used by the nation's leaders in their efforts to develop healthy citizens. You, too, can use these facts in your sales and public relations campaigns to sell your brand product to the families who live on your Main Street. These facts represent one of the many services provided by the National Dairy Council in its time-tested program to condition the market for more sales in dairy foods.

In addition hundreds of recipes directed by NDC to the nation's press and radio on a weekly and monthly basis flow regularly, to newspapers, comprising a circulation of well over 30 million. Syndicates and food page editors of magazines solicit the recipes and use them on their food pages which provide the "know how" for homemakers who plan the meals and buy the dairy foods at food outlets on Main Street.

Research is the life blood for progress in the dairy foods industry. It represents one of the major services of the National Dairy Council to mankind. Its worth to the industry in dollars and cents could never be estimated, for its influence reaches not only every segment of the dairy industry but branches out into other significant allied industries.

The National Dairy Council is in the midst of its membership drive for the coming year. The budget goal of $300,000.00 must be reached. Producer membership to the National Dairy Council comes through the American Dairy Association and the ice cream membership dues in NDC are paid for those members of the International Association of Ice Cream Manufacturers, who are pledging to its public relations program by the International, out of the public relations program funds. This entitles those firms to ice cream membership privileges of the Council including discounts on ice cream materials.

Facts from the test tubes help to open up new markets for more sales in dairy foods. Use them in your display advertising, direct mail advertising, merchandising, and window displays. Direct the messages to the youngsters, teen-agers, adults, and oldsters as well. Write to the National Dairy Council for more material to help you sell more dairy foods.

If you are not a member of NDC, send your application to the National Dairy Council now.

BRIGHT, SHINY SUPERIOR CANS

Better Protection For Your Products

Easy to clean and keep sanitary, Superior Seamless-Weld Cans feature the exclusive Superior method of bottom-to-cylinder welding. Seamless-Weld and roll or hoop type Superior fused bottom cans give longest service under all conditions. *Check your cans frequently for interior rusting and open seams.* Replace with bright, shiny Superior Milk Cans.

Write for FREE catalog.
Contains full information on Superior's complete line.

SUPERIOR METAL WARE DIVISION
JOHN WOOD COMPANY
509 FRONT AVENUE • ST. PAUL 3, MINNESOTA

IT PAYS TO USE R&M QUALITY FILTERS

FAST-FILL COTTON DISCS
FAST-FILL COTTON DISCS
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COTTON DISCS
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WRITE: REEVE & MITCHELL *Division of Schwartz Mfg. Co.*
300 SPRUCE STREET • PHILADELPHIA 7, PA.

YOUR DAIRY COUNC
CLASSROOM PROJEC

Connecticut Dairy and Food Council officials toast the thirtieth meeting of the organization with the stuff that counts. Left to right they are A. C. Fisher, Bryant and Chapman, Hartford; Marian Arnold of the Connecticut Council; Ken Geyer, Connecticut Milk Producers Association, and Milton Hult, National Dairy Council.

New Studies Show Vast Future Market For Milk

Thirty Year Old Connecticut Dairy and Food Council Hears Milton Hult Discuss Great Dairy Potential

NUTRITIONAL needs of the old as well as the young were discussed by Milton Hult, President of the National Dairy Council at the thirtieth meeting of the Connecticut Dairy and Food Council. The Connecticut Council, one of the oldest affiliated units of the National Dairy Council, has established an enviable record in promoting the use of dairy products.

As guest speaker, Mr. Hult stressed the value of the Connecticut Dairy Council to its industry members. He pointed out the big job ahead, especially in view of the fact that nutritional research, in a study at the University of Illinois, shows that growing boys and girls need one and one-half quarts of milk a day, instead of the quart which is popularly supposed to be standard. Mr. Hult cited another study being made at the State Universities of Iowa and Michigan which shows that elderly people require one and one-half pints of milk instead of the one pint which has been the accepted standard.

Mr. Hult, former President of International Association of Milk Dealers (now The Milk Industry Foundation), is a member of the Advisory Committee of the Nutrition Foundation, Inc., and a member of the Advisory Council for the Mid-Century White House Conference on children and youth.

Among the 115 guests were the following founders: J. W. Alsop, first President, W. M. Bryant, C. G. Morris, S. M. Buckingham, and Eugene Lamphier. Mr. C. G. Morris, of New Haven, who has been an officer of the Dairy Council since its founding, was presented with a silver box in appreciation of his years of service with this organization.

At the business meeting preceding the dinner, the Dairy Council re-elected its officers as follows:

President—Mr. A. C. Fisher, Managing Director, Bryant and Chapman Company.

Vice-President—Mr. Donald Thomsen, Secretary, Connecticut Wholesale Milk Producers Council.

Honorary Vice-President—Mr. Charles G. Morris, New Haven, Conn.

Secretary—Mr. Stewart Johnson, Associate Professor of Agricultural Economics, University of Connecticut.

Treasurer—Mr. Elmer O. Anderson, Professor of Dairy Manufacturing, University of Connecticut.

Exhibits illustrating the work done by the Dairy Council during the past year were set up around the room, with a nutrition staff member attending each exhibit.

Miss Marion Arnold, Nutrition Director, feels that in view of the Council's accomplishments the past year has been a most successful one. Miss Arnold was more than pleased to see the many members who turned out for the meeting which was considered by all to give a very true story of Dairy Council Activities.

George F. White, Homer, Louisiana, has been named Executive Manager of the Louisiana Dairy Products Association, it has been announced by F. M. Christiansen, President of the Association.

Mr. White has long been identified with the dairy industry of the state. He is executive head of the Claiborne Creamery Company of Homer, is a past-president of the Louisiana Jersey Cattle and Dairy Association, and was named Louisiana Dairyman of the Year in 1949. He is a graduate of Louisiana State University and served several years as an Instructor of Dairying at that institution.

Mr. White represents Louisiana on the Executive Committee of the American Dairy Association, and is also national Secretary and a member of the Administrative Committee of that organization.

Mr. Christiansen states that the industry background and the wide acqaintance of Mr. White with industry affairs will e helpful in advancing the interests of the Louisiana Dairy Products Association through this newly created office.

George F. White

SALES AND SALESMEN

(*Continued from Page 12*)

plan and of the way he handles his men, results in a twofold benefit.

The direct benefit results from exceptionally large sales of long-profit by-products. The secondary benefit, from selling these by-products, is that the extraordinary number of by-product sales calls made by the route salesmen, tend to increase the standing milk order for regular customers, and to attract numbers of additional milk customers.

These additional milk customers are brought in, not only through the good salesmanship of the route salesman, but also by reason of the excellence of the by-products.

His milk is equal to the best in the market. His by-products are outstanding. So this, together with the salesmanship of his men, provides, the powerful magnet that builds ever-higher route averages.

There are a lot of union men who are eager to get ahead. They crave the good things of life for their families and themselves. It is sound business for the milk distributor to recognize this fact and act accordingly.

A few years ago, a large milk concern offered a sales training course to its union milk drivers on a strictly voluntary basis. They could take it or leave it without prejudice to their jobs. It promised no immediate automatic increase in their earnings. Only thirty men could be handled at a time.

But, before the project was completed, over 2,000 out of a total of 2,200 men had taken the course.

The milk distributors of Philadelphia are sponsoring a course in milk salesmanship, which is being given by Temple University. We understand that from 65 to 100 men take advantage of each successive course, as the opportunity offers.

There is substantial reward to be won by dairy management that will encourage and help them to make the most of themselves.

●

DUGO
BUY
CHRISTMAS SEALS
FIGHT
TUBERCULOSIS

INDUSTRY PROBLEMS

(*Continued from Page 44*)

enough milk from these species to make the operation possible.

The chemical engineering principles employed in drying milk are applicable to the drying of many other products, such as fruit juices, soups, coffee, and vegetables. Products in general are dried by two processes: roll drying and spray drying. In the roll process the material is dried by allowing a coating of the wet material to dry on the surface of a heated drum from which it is automatically scraped by sharp knives. In this process the usual temperature of drying is above 250°F., and the resulting product will usually show some brown color and will not be so soluble as spray-dried products. The equipment is relatively less expensive, however.

Spray-dried products are produced by spraying a solution of the material into a warm air blast which removes the moisture. Because of the rapid evaporation, the final temperature may be quite low and the product will usually have good color, flavor, and high solubility.

While we do not know why you desire to dry the milk of these various animals, we suspect that you would like to preserve their properties as far as possible. This would make it necessary for you to use the spray-drying process. Unfortunately it is extremely difficult to build a small, efficient spray drier and it would be necessary to have a large supply of milk to get good results in commercial equipment. It would be difficult to gather enough milk of these species to even start the equipment. At least one laboratory spray drier is available which might be used. It requires at least one quart of milk to get the machine running properly but is far too small and slow for any kind of commercial production.

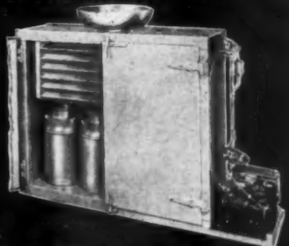
There is one other process of drying which might be used. The skim milk is frozen and placed under vacuum so that the water may be drawn out of the solution. This is a common laboratory procedure and there may be commercial machines which could perform the operation. It would seem to us that this method might be the one applicable to your problem.

New Aeroflow **DRY COLD** *Milk Cooler*

FILTERS • AERATES • SHOCK COOLS • REFRIGERATES • IN ONE OPERATION

FOR YOUR MILK PRODUCERS

Do you want really LOW bacteria count milk from your producers? Tell them about the new *Aeroflow* DRY COLD *Milk Cooler* which filters, aerates, shock cools and provides year around refrigeration without water or ice. Complete information sent on request.
Dealerships now available.



STAR PUMP AND COOLER CORP. • 1220 NO. 15TH ST. • ST. LOUIS 6, MO.

XUM

MILK FLIES TO ALASKA

(Continued from Page 49)

Everett and Seattle. Meadowmoor Dairies of Everett, according to A. R. Rygg, manager, is sending to Alaska during the peak winter months as much as 7,000 to 8,000 quarts of fresh milk a week besides a large poundage of other dairy products, including cottage cheese, buttermilk, cheese, and ice cream mix.

Air freight on fresh milk to Anchorage from Everett runs 32c per quart, the same as the rate on fresh produce. Milk bottled in Everett one day, leaves by air in the afternoon and in 10 to 12 hours is on the store counter in Alaska.

The milk is packaged in quart paper containers and packed in 20-quart corrugated boxes for the Alaska shipment. The dairy delivers the cartons to the air port, and the delivery man remains at the port until the cartons are on board the plane.

Today, instead of the individual store operator making arrangements direct for fresh milk from Everett or Seattle, milk is shipped to a milk agency in Anchorage or Fairbanks, and then distributed to dealers there.

With a several thousand per cent volume increase since 1946, it is a natural question – what is the future picture for airlift milk to Alaska.

Milk plant operators agree that volume should continue to increase so long as Alaska increases in strategic importance in the world picture. Today the Army, through the quartermaster depot in Seattle is buying and freezing approximately 5 per cent of the milk produced in the Seattle-Everett area. This milk is shipped by boat to Alaska. Add this to the vast amount of fresh milk, powdered and canned milk which is going North, you can understand that there is something big going on up there which requires a lot of men and women; mostly men and women who are new to the territory. As this army of workers increases the demand for fresh milk will increase.

PUBLIC GETS SWIFT PATENTS

Ice cream and confectionery manufacturers who use monoglyceride compounds in the manufacture of their products will benefit by a recent notice from the U. S. Patent Office that patents covering use of these compounds have been dedicated to the public.

Individual manufacturers may now have use of these patents without license or payment of royalties.

Use of monoglyceride compounds in ice cream was developed by Swift & Company about 12 years ago.

Patents were granted to Swift & Company (No. 2065398 and Reissue Patent No. 22858) but these were made available to the industry through licensing.

Swift & Company feels that free use of these patents would benefit the entire ice cream industry, and has filed in the Patent Office a dedication of them to the public. Information on use of the methods may be had by requesting the Patent Office for copies of the patents.

SYNTHETIC RUBBER HAS GREAT FUTURE

(Continued from Page 40)

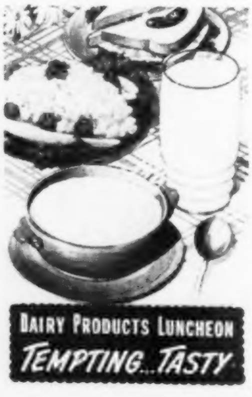
plates was solved. Perfect bonding of these gaskets to the stainless steel is now accepted as a matter of course.

In the meantime a new equipment such as advanced types of plate heat exchangers were being designed. In the case of the heat exchanger, the designing engineers wanted the gasket on the machine to be made in a single continuous piece, straddling two edges of a stainless steel gasket carrier plate, encircle port openings, provide leak detection grooves, and also to be continuous across the faces of the plate at the ends. The problem was presented to some of the best rubber molders but none would admit it possible to bond satisfactorily such a job. The special rubber compound that was necessary, the fact that it required bonding to stainless steel which is one of the most difficult of all metals to bond, plus the stipulation that the bond must meet sanitation requirements, made the task a difficult one.

Many of the details involved were worked out in the laboratory. It was suggested that the rubber be molded and bonded to the stainless steel plate during a single operation. A mock sample of the bond using the particular rubber compound desired and a vulcanizing technique developed for this particular job was made up in the laboratory. The bond was perfect and the new heat exchanger went into production.

Effect of Fat On Rubber

Investigations into the suitability of various rubber compounds for use in



COTTAGE CHEESE PROFITS

Lent begins February 7, . . . Plan your Cottage Cheese Campaign now!

The 1951 Gundlach Cottage Cheese Promotion includes dehydrated ingredients for Flavored Cottage Cheese; full color lithographed posters; bottle hangers, folders, special containers, etc.

CONSULT A GUNDLACH MAN AND INSURE COTTAGE CHEESE PROFITS!

G. P. GUNDLACH & CO.

"Servants to the Dairy Industry"

1201-07 West 8th St. Box "A" CINCINNATI 3, OHIO

the dairy industry has produced some spectacular results. Butterfat is a great enemy of rubber. Ordinary rubber subjected to contact with butterfat deteriorates rapidly. An experiment conducted in the Creamery Package laboratory is a graphic demonstration of this fact. Two different types of rubber, both the same size, were submerged in samples of butter oil at 158 degrees for seven days. During the test one type of rubber swelled up until its volume had increased by 210 per cent. The rubber became mushy and generally useless. The other type of synthetic rubber, especially compounded, was not affected by the butter oil and retained its normal volume and structure.

The study of the particular requirements of all rubber used in various pieces of dairy equipment resulted in a system of rubber standards being set up to insure each piece being made of the rubber compound best suited to the service it will receive in the field. Rigid specifications now cover the compounding of each rubber part. To meet some of these specifications, the chemical formula of a compound satisfactory for one part is sometimes changed or adjusted to produce a material as specified for another application after being given a prescribed laboratory test. In an occasional instance involving extremely heavy duty a rubber part may need to be observed in the field for as long as two or three years before obtaining sufficient performance data to indicate the desirability of adjusting the compound formula.

Such a research program on rubber or rubber like compounds might at first appear somewhat complicated. On the contrary, it has proven to be a simplification from several angles. A rubber supplier is benefited because, instead of guessing as to the kind of rubber needed, he is told in the specification exactly what is required regardless of cost. The manufacturer is benefited by an assurance that repeat orders from the same specification will be made of the same material and formulation. And finally, the customer obtains a better and more lasting piece of equipment.

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CAN WASHING

(Continued from Page 43)

by the acid. This solution should likewise be changed frequently. If the cans are to be put through an alkaline can washer in place of the wash sink with manual cleanser solution, two changes in the procedure outlined should be made. As a final step in the acid detergent, the cans should be brushed on the insides. Following this the cans should be rinsed immediately with warm water prior to running them through the can washer. The change that takes place in the appearance and condition of the cans where this program has been used is really surprising!

To assist a well-operated can washer to do a good job and to prevent the formation of water scale or buildup, both on and in the washer and cans, it is essential in most of our waters in this area to use a dependable calcium sequestering chemical or water conditioner along with the can cleaning alkali.

This should be pre-dissolved and added to the water in the wash tank and feeder. In multi-tank washers it has been found advisable to add water conditioner to the water in the rinse tank. The amounts of water conditioner to be used should be determined by running a hardness test on the water. After the water has been conditioned the alkali to be used in both the wash tank and feeder should be predissolved and added.

I would like to point out the importance of cans, as related to milk quality on the basis of "Blue" tests, in a plant in central Minnesota. At the outset their cans were found to be in very bad condition. All of their cans, 3,200 of them, were hand cleaned with the acid detergent program as outlined. The can washer was carefully checked and it was discovered the alkalinity of the wash tank solution was next to nothing. The reasons for this were hand feeding and a float valve on the wash tank that was not capable of handling the pressure of the water to the tank. A three-inch piece was welded on the rod to the float to provide a longer fulcrum making it capable of closing the water valve at the correct level. A feeder was installed and regulated to maintain a proper range of alkalinity. Sufficient water conditioner was used in both the wash tank and feeder to compensate for the hardness of their water.

The comparison in this plant, before and after, is indicated in the following tabulation:

Decolorizing or Fading Out	Patrons Last Half September	Patrons Last Half November
1 Hour	7	0
2 Hours	6	1
3 Hours	18	1
4 Hours	13	6
5 Hours	31	6
6 Hours	40	8
7 Hours	32	21
8 Hours	42	17
9 Hours	36	170

The record in this plant is very remarkable and certainly points home the value of having good, clean cans. The secret of the success enjoyed by this plant and, indeed, the secret in any plant is close attention to the can cleaning operation.

Kurly Kate
METAL SPONGES
Designed especially for cleaning all types of dairy equipment and utensils. Will not rust or splinter, cut the hands or injure metal or plated surfaces. Kurly Kate Metal Sponges are fast working, easy to use, and easy to keep clean. Made in STAINLESS STEEL, NICKEL SILVER and BRONZE.
GUARANTEE
Send for a trial order
Satisfaction fully guaranteed
KURLY KATE CORPORATION
2215 S. MICHIGAN AVE. CHICAGO 16, ILL.
Kurly Kate stainless metal sponge
FOR EASIER INDUSTRIAL CLEANING
SOFT ON HANDS
SANITARY
ORDER FROM YOUR JOBBER OR WRITE DIRECT

OPTIMISM IN NEW JERSEY

Rising Consumer Incomes Expected to Stimulate Demand for Milk

The outlook for the New Jersey dairy industry in 1951 is one of "mild" optimism according to John W. Carncross, Rutgers agricultural economist. The determining factor in the situation will be the strength of the demand for dairy products. Rising consumer incomes anticipated for the country are expected to result in an increased consumption of fluid milk and ice cream.

Carncross points out that the nation's production of milk for 1950 will be very close to the all-time record production of 1944. A large quantity of this milk was used in 1950 in making butter and cheese. Prices of butter and cheese fell to the support level and the government bought large amounts of these products. Cold storage holdings of creamery butter and cheese are now considerably larger than a year ago and also far above the average for the last 5 years.

Below 1948 Peak

Prices received by New Jersey farmers for milk are subject to administrative regulation, the State University economist explains. Many factors enter into price changes including the demand, supply of milk and production costs. In the first part of 1950, due in part to the large supply of milk, prices fell sharply. Prices were considerably below those of the two preceeding years. From October 1948 to May 1950 the farm price of milk in New Jersey fell $2 per hundred pounds. This was the largest decline for a similar period in history. Since May of this year, milk prices recovered somewhat but are still 13 per cent below the 1948 peak.

Prices paid by New Jersey dairymen, on the other hand, for items used in the production of milk are nearly as high as the peak of two years ago. At the present time prices paid by dairymen for feed, labor, machinery, milk cows and hay are all moving upward. The $64 question for the dairymen is "Will milk prices keep up with spiraling costs?"

It now looks like about a 50-50 chance that rising milk prices will keep up with increasing costs. Under such a situation continued vigilance in efficiency of production will be necessary.

If the present inflationary trend continues, costs of distribution probably will increase and this will be reflected in consumer prices.

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WASHINGTON REPORTER

(Continued from Page 34)

plained. "We could tell farmers we would stand back of them in producing food as we were standing back of industry producing guns.

"Now we've piled up between $325,000,000 and $350,000,000 worth of Government-purchased meat, milk and eggs, taken off the market to sustain the price. We are going to have to make available to the people in one way or another, this food.

"We are going to have to make it available to the people in regular market channels and see what happens. If the price breaks below a fair yield to the farm producer, we will have to make up the difference."

JOB INTERVIEWS

(Continued from Page 28)

even difficult but you and I, we, are always easy to get along with. What I mean to emphasize is that none of us seem to recognize when we lack the characteristic.

Yet you as interviewer know that some do lack the ability to get along well with others and you don't want to hire anyone who isn't going to get along well with the others in your company. Here once again you are not going to be able to find the answer easily. From your conversation with the applicant you formed an impression regarding the personality. You may have already decided that the applicant is the type who would get along well anywhere. Additional questions such as "What are some of the good things your friends might say about you?" or "What are some of the bad things your friends might say about you?" may help you in reaching your decision.

If you as interviewer can talk with a responsible person who knows your applicant well, you can obtain an opinion which will help you appreciably. Such contacts could be made with previous employers, schools, references, or with friends of the applicant who already work for your company.

When the Answer Is "No"

Part of your fourth objective deals with the cases where you are unable to offer a position. There may be no openings or you may have decided that the applicant doesn't meet your requirements. You would like the ap-

***Better* DRY MILK**

AT LOWER COST

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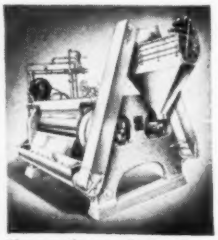

DRY MILK MACHINES
Built in Five Sizes

The Patented, glass-smooth, "20-year cylinders" give years and years of maximum production of a superior dry milk at the lowest possible cost.

Many other exclusive features insure long life with low steam and power costs. Complete details upon request

OVERTON MACHINE COMPANY
Dowagiac Michigan

WANT LOWER COUNT– HIGHER QUALITY MILK?

Make sure your suppliers sanitize with

LoBax-21

the fastest-killing bactericide on the market.

MATHIESON CHEMICAL CORPORATION
Mathieson Building
Baltimore 3, Maryland

plicant to leave with a definite understanding. It isn't pleasant to have to tell an applicant that he or she does not qualify, but this step should be taken. The applicant should know.

You would want your explanation to be tactful and understood. You would want to encourage the applicant—possibly by suggesting other lines of work. In the case where you have no openings, you can assure the qualified applicant that consideration will be given in the future.

Your fifth and final objective has been met by the manner in which you handled your other objectives. You've tried throughout your interview to have the applicant like you and your company. After your interview, stop and ask yourself "Was the applicant at ease? Did she enjoy the discussion? Was she given complete information? Am I sure my decision was fair and just from the viewpoints of both my company and the applicant?" And finally, "Does the applicant like me and my company?"

Schools and colleges are realizing more and more the importance of helping their graduates obtain suitable emlpoyment. Vocational guidance departments are steadily growing in numbers, in size, and in importance.

Many of our educational institutions give training on job-seeking. Some schools arrange through cooperation with business to have their students interviewed by employment people simply as a training medium. These interviews help greatly by giving students a better understanding of what to expect when they apply for work. Recall the young lady who answered the question, "Are you nervous?" by responding, "Nervous! I'm scared to death." It was her first employment interview and it is quite possible that one reason for her nervousness was the fact she had obtained no understanding of employment procedures.

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SAFE OR SHOEBOX

(Continued from Page 32)

feet high, set in concrete with the face flush with the floor, and with a removable dial.

But tougher safes have presented a peculiar problem in that some of the night shift boys have switched to daylight strong arm stuff where they rush into a store, or plant, and force the owner or manager to open the safe.

Manufacturers are one jump ahead here, too, with a double combination safe. For it takes two men, each with the knowledge of one combination, to operate this number.

Devices known as re-lockers often prove maddening even to experts in the safe craft. When a safe is disturbed by yeggs whaling at the combination with a sledge hammer, the re-lockers are actuated, and when the combination dial falls to the floor, the lads are still confronted with a locked door.

Not all safecrackers are after your money, at least all of it. Some work for fees, such as the famous Thorbeckes of Evansville, Ind., a three generation family of legitimate cracksmen who specialize in opening safes sealed by fire or whose mechanisms have been chewed up by a clumsy looting attempt. Most of the sledge and blow torch artists however, are playing finders keepers.

Door Shakers Don't Help

A locked front door doesn't mean much to a safe cracker. Not one to observe etiquette, he enters through a rear window, or a sky light. That's why the cop on the beat, known in the trade as a "door shaker", rarely spots boys drilling a safe.

But you can take advantage of the beat walker's protection by moving the safe to the front of the building where it can be seen, and by keeping a strong light on it. Many motion picture theaters have adopted the up-front system, and have built a safe in the box office. They are rarely hit.

Some dealers go to all kinds of extremes to make an old safe burglar proof. A Texas merchant pasted a sign on his safe, stating the combination, and followed by the advice, "Here is the combination, but there's no money inside. If you don't believe it, open the door and see." Thugs who entered the establishment apparently were easily convinced for they lifted $30 from the cash register and neglected the $400 in the safe. The combination was the correct one, too!

Most of the stories have sad endings, although occasionally there is a humorous twist – as long as you're reading it in a newspaper and aren't the loser. Take the case of a Los Angeles restaurant owner who entered his office one morning last April and found the safe open, $3,500 missing, and a note on the desk which read, "Kilroy was here."

True, safes are expensive; but so is insurance, and a good installation may cut your insurance rate. If a new unit won't fit the budget, take the precautions that don't cost money: keep funds in the bank, place the safe where it can be seen, anchor it, keep it lighted, and lock it!

Remember, Johnny Blowtorch may be sizing up your shoebox. Think it over.

PROMPT SHIPMENT
BAKER BOX
EST. MASS.
A DIVISION OF CONNOHIO, INC.

a "whale" of a case...

The *life* of YOUR milk case makes a *"Whale of a Difference"* in YOUR profit picture. The Baker Case... built by mastercraftsmen since 1855... and constructed of the finest New England Hardwoods plus rust-resistant steel... assures you of the maximum number of trips per case. It's no wonder that Baker Cases are known throughout the industry as the *"Standard of Quality"*

BAKER BOX WORCESTER 8, MASS.
A DIVISION OF CONNOHIO, INC.

BAKER CASES

XUM

USING OUR SEPARATOR

Reworked Work Gloves

A NEW WORK glove reconditioning service that by actual study, is saving one large user over 80% of all gloves sent in for salvage is now offered on a national basis.

U. S. Industrial Glove Corporation, 9350 Roselawn Avenue, Detroit 4, Michigan, who are the originators of the service explain that it is designed for all industries and occupations. Although new to the extent that it has not been offered nationally, the plan has been thoroughly tested for workability and is already proving successful in automotive, glass, welding, rubber, office machine and electrical plants. In many instances it has been found that workers prefer reconditioned gloves to new gloves because of their pliability and comfort.

The service includes complete renovation, sanitizing and packaging of all types of worn-out fabric and leather gloves and protective clothing. Special equipment and methods have been developed for performing the unique operations.

It has been disclosed that most gloves which were thrown away until now, can be re-used. With the cost of new gloves already increasing approximately 15%, and more, and reconditioning costing only a fraction of new glove cost, a material savings can be effected. Observation has proven also that many gloves can be salvaged several times. Salvage, on the study which involved over 1,000,000 gloves of every type from a wide variety of industries, averaged 83.9%.

Under the plan U. S. Industrial Glove Corporation, offers convenient transportation, at no additional expense, in all industrial areas. Fireproof containers are furnished, if desired.

●

Milkstone Remover

DIVERSEY is out with a new aid for dairies and milk plants in their farm quality control work with producers—DILAC milkstone remover in the new quart jar.

The quart jar meets a popular demand for DILAC in a more convenient, easier-to-use container than the well-known gallon jug.

DILAC in quart jars (12 to a case) is sold through dairies and milk plants to producers to help them maintain consistently high quality milk production on the farm.

Regular use of Diversey DILAC, a mildly acid-type liquid remover, not only assures elimination of old milkstone deposits, but prevents formation of new ones as well.

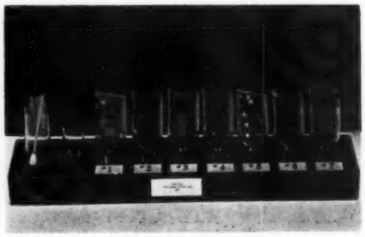
For regular use in dairies and milk plants, particularly for daily cleaning of plate type H.T.S.T. pasteurizers and tubular units, DILAC is available in 50-gallon casks, 13-gallon carboys and gallon jugs (four to a case).

●

Bacteria Test Kit

A SIMPLE test kit for detecting bacteria at any step of dairying has been announced by the Belfer Laboratories, Peoria, Illinois.

The light Belfer Bacteria Detector Kit consists of a stand, sterile swabs, sterile water and sterile bottles containing a jelly-like agar substance. No special training or laboratory facilities are required to make the tests. To locate the source of a high bacteria count – or to check on cleaning and sanitizing operations – the user swabs the surface to be tested, wipes the swab on the agar in a bottle, and seals the bottle. If bacteria is present on the tested surface, spots will appear on the agar in one to three days. These spots are bacteria colonies and their number permits the amount of contamination to be readily judged.



"The Detector Kit is primarily de-

24 Hour Self Service
ICE CREAM

***Self-Service* FOOD SALES**

STURDY-BUILT
FOOD VENDING STATIONS

Self contained refrigerated unit 8' x 8' x 16' — ready for operation as independent outside installation. More sales at greater profit. Direct sales to customer — more convenient for consumer — greater distribution at lower selling and delivery cost — supplement present sales and distribution.

Complete with venders, delivery chutes and coin switches. Vend Packaged Ice Cream, Milk, Butter, Frozen Food, etc.

Product of F. B. DICKINSON & CO., Highland Park Sta., Des Moines, Ia.

WRITE TODAY FOR DESCRIPTIVE FOLDER

When Shipping Poultry & Dairy Products to New York

You will find the collection of Drafts will be greatly facilitated if they are drawn through

THE MARINE MIDLAND TRUST CO. of New York

Chambers Street Office:
130 CHAMBERS STREET

signed for dairies who do not maintain their own laboratories and wish to save the expense of constant consultation," says Mr. Sam Belfer, developer of the kit. "Although it is not a substitute for the standard plate count, several of the dairies with whom we worked in developing the kit have proved that the Bacteria Detector Kit is effective both in heading off trouble before it starts, and in locating contamination after it occurs. These dairies have adopted the practice of making regular checks at the locations most susceptible to bacteria growth."

●

Catalog of Pumps

A FULL LINE of pumps for handling corrosive and non-corrosive liquids, solids-carrying liquids and dry and semi-dry materials is presented in a new condensed catalog issued by Yeomans Brothers Company, Chicago.

For easy use and reference the book is organized in sections as follows: Corrosive and Non-Corrosive Liquids – with emphasis on vertical submerged centrifugal pumps, a type developed and pioneered by Yeomans; horizontal end-suction circulating pumps.

Solids-Carrying Liquids – horizontal and vertical non-clog centrifugal pumps to handle solids, in various styles and different bearing constructions; and the Shone pneumatic unit–its application, operation and advantages.

Dry and Semi-Dry Materials – the Yeomans "Transporter" for handling bulky materials – suggested applications and operation.

The catalog contains twelve pages printed in two colors, fully illustrated, and includes a complete list of Yeomans distributors, names and addresses

A copy of the catalog is available upon request on business letterhead to Yeomans Brothers Company, care of this publication.

●

New Milk Dispenser

A NEW MILK dispenser for use in dairy bars, restaurants, fountains and lunch counters has been introduced by the Thomas Terry Corporation of Minneapolis.

DRINK
COLD REFRIGERATED
HOMOGENIZED
PASTEURIZED
MILK
Sani-Serve

Made in several models with varying capacities the dispensers called "Sani-Serve" are almost completely fabricated of stainless steel. Most models feature stainless steel on the front and complete interior while top and back are made of porcelain.

The models range in size from a one spigot dispenserup to four spigots for large high speed operations. Exclusive features claimed by the manufacturer for the "Sani-Serve" include a full open rounded edge ledge. This ledge can be wiped from corner to corner as there are no cut corners, pillars, or crevices for any germs or dirt to collect. Another feature is a hose placed onto a nipple at the bottom of the can and then run up the side so when delivered there is no gathering of dirt or dampness.

The model shown in the photo is the T.S.4 which holds two 5 gallon cans of milk plus two special cans for other products such as butter milk or chocolate drink.

Further information on the "Sani-Serve" will be supplied on request to this publication.

●

Steam Generator

CYCLOTHERM Corp., Oswego, New York, presents a new addition to its automatic line of package type Steam Generators. It has the versatility of being fired either with light oil, heavy oil or gas and the combination of gas and oil operation. Available in pressures from 15 to 200 PSI. It comes equipped with an integral Cyclotherm Burner, automatic safety and operating controls, steam trim, valves and other equipment necessary to comprise a complete unit.

Units are assembled, piped, wired and test fired for performance prior to shipment. Boiler surface is insulated with fibre glass over which is fitted a metal jacket. Units are ready to operate upon arrival, the only connections required are water, steam, fuel and electric.

No stack is required for the function of the Cyclotherm unit. A simple flue vent to conduct the exhaust gases outside the building is sufficient, but local regulations must be observed.

Its patented Cyclonic combustion power represents the first major improvement in Heat Transfer since the inception of Steam Generation.

NOW!!! LIQUID STAINLESS STEEL

Same as Used on Food Equipment 18-8 Type No. 302 — In Plastic Vehicle

Applied Like Paint — Either Brush or Spray — Dries Tack Free in Five Minutes — Corrosion Resistant To: Alkalis, Salt, Food Acids, Fats, Oils — Heat Resistant in Excess of 280°F.

Can Be Applied to All
METALS WOOD CONCRETE BRICK
PLASTER BOARD COMPOSITION BOARD

One Gallon Covers 400 to 500 Square Feet

Price Per Gallon **$12.00** (4 Gallon Case **$48.00**)
F.O.B. Minneapolis, Minnesota

THE STEPP CO., 4033-23rd Ave., So., Minneapolis 7, Minn.

Please ship us .... gallon(s) of LIQUID STAINLESS STEEL. Check or Money Order enclosed or send C.O.D.

Name of Firm: ....
Authorized Signature ....
Address ....

XUM

Commercial Soft Water

AN INSTALLATION which makes soft water available for commercial users on a service basis has been announced by the Culligan Soft Water Service, Northbrook, Illinois.

The Culligan Commercial-service Header accommodates multiple installations of the standard zeolite-type Culligan service softener. Equipped with push-button Cul-Flo-Valvs, a brine maker, check valves, a brine timer, and a brine and rinse flow rate controller, the assembly allows for parallel softening and backwashing and series brining and rinsing.

Standard Culligan softener units are provided on a service basis. They are connected to the header assembly and regeneration equipment which is used to maintain the efficiency of the zeolite. Four such tanks have a capacity of 8,000 gallons of 10 grain hard water between regenerations at a maximum flow of 28 gallons per minute. Ten tanks would have a 20,000 gallon capacity of 10 grain hard water at 70 gallons per minute maximum flow.

The service tanks are exchanged regularly by the Culligan Soft Water Service dealer for professional regeneration. Exchange frequency is dependent upon the turbidity of local water supplies.

All piping, valves, and fittings are made of streamlined copper and brass. The automatic flow-rate controller regulates brine and rinse rate at one and one-half gallons per minute. The regeneration time is variable to three hours and the Brine Maker has a capacity of 200 pounds of salt.

Capacity of the new Culligan unit is guaranteed to remain constant, insuring maximum performance at rated water softening capacity.

●

Utility Brush

THE NEW TITAN utility brush is built on a hard rubber block that cannot crack or deteriorate. Titan is suited for all types of cleaning where a long-lasting brush is needed. According to the Flour City Brush Co., of Minneapolis, Minn., one large dairy products processor used a Titan utility brush 37 times longer than a brush formerly used for the same job.

Titan has crimped nylon bristles that hold more water and are more sanitary than fibre bristles the manufacturer claims. These nylon bristles are available in three grades of stiffness and flat or oval faces, for easy cleaning of all surfaces.

●

New Type of Packing

AVAILABLE to food and allied industries is a new mechanical packing known as Ray-Pak which is made of a continuous filament fibre lubricated with non-contaminating, tasteless, odorless and edible lubricant. Specific advantages, claimed for the product, are Ray-Pak's tensile strength and durability and due to its being square braided into a solid length of continuous filament yarn—its resistance to fraying. Its use positively eliminates the ever-present danger of scored rods & shafts. Ray-Pak is recommended for use on bottling machines, dough mixers, homogenizers, etc.; reciprocating and rotary rods, valve stems, to pack against beverages and other food products. Furnished in coil or ring form from 1/8" to 1" in increments of 1/16". For complete details and catalogue, write Packing Division, Flexrock Co., 36th & Filberts Sts., Philadelphia 4, Pa.

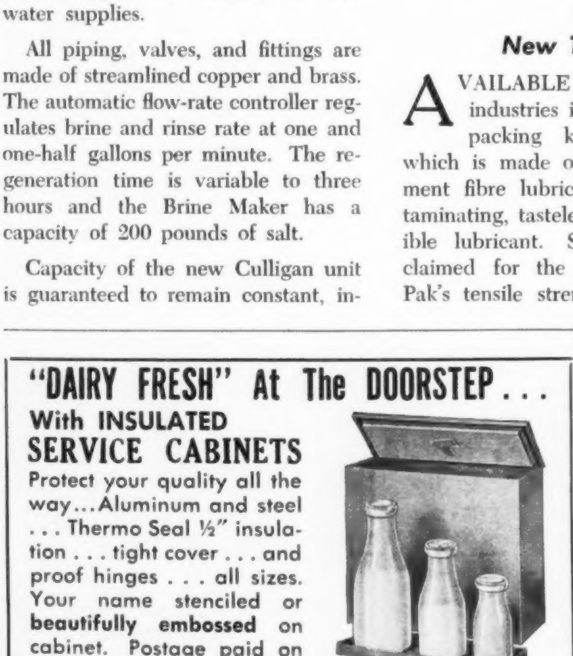
●

Reduces Bottle Etching

RECENTLY completed laboratory tests of a synthetic detergent have revealed that it possesses the unique property of reducing substantially the corrosive attack of straight caustic soda solutions on glass surfaces. These tests were conducted by the Application Research Laboratory of The Solvay Process Division, Allied Chemical & Dye Corporation, on the new Solvay detergent, Nytron.

The primary purpose of the work was to seek means to reduce the corrosion of bottles in machine washing, which aggravates the familiar "scuffing" problem of the bottling industry. However, results indicate a possible wider field of benefit in reducing corrosion wherever glass or ceramic surfaces are in contact with alkaline solutions.

Representative tests showed the weight loss of typical Coca-Cola bottles due to caustic soda attack about 14 times less with Nytron in the caustic solution. Weight loss due to corrosion of glass microscope slides was reduced about 210 times compared to


"DAIRY FRESH" At The DOORSTEP . . .
With INSULATED
SERVICE CABINETS
Protect your quality all the way...Aluminum and steel . . . Thermo Seal ½" insulation . . . tight cover . . . and proof hinges . . . all sizes. Your name stenciled or **beautifully embossed** on cabinet. Postage paid on sample, list price.
Write Today . . . or Ask Your Dairy Supply Salesman
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OWATONNA 10, MINN.

THE GIRTON THRIFTY 50
THE NEW ECONOMICAL 50 GALLON PASTEURIZER!
ONLY $595.00 FOB MILLVILLE, PA.
100 GAL. CAPACITY $795
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The greatest pasteurizer value ever offered. Heavy ga. stainless steel milk receptacle, breast ring and cover. Steam vapor heating and many other features.
Write for bulletin.
GIRTON MFG COMPANY
MILLVILLE, PENNSYLVANIA

the weight loss of test slides in a caustic solution not containing Nytron. Maximum inhibition of caustic soda attack on bottles was obtained with small quantities of the product, .10 to .25 per cent, in a 2 per cent caustic soda solution. Agitation of the solution prolonged the inhibiting action, which averaged two weeks in duration.

A complete, 26-page report describing full details of this research project is available without charge upon request to The Solvay Process Division, Allied Chemical & Dye Corporation, 40 Rector Street, New York City.

●

Phenoline for Concrete

UNSKILLED and inexpensive "acid proofing" of concrete floors, for many corrosive services, is now possible with the use of a brush-on phenol formaldehyde coating that hardens at room temperature.

In addition to being easy to apply, the new material is 2 to 9 times harder than conventional floor paints. Durometer readings are 85 to 90, compared with steel at 100. One primer coat and two finish coats are estimated to last 2 to 3 years on steps and other surfaces where considerable walking (but no trucking) takes place.

The new material is called Phenoline.

It resists organic and inorganic acids, except nitric acid. It is not recommended for alkalis, but so far no solvent has been found to dissolve it.

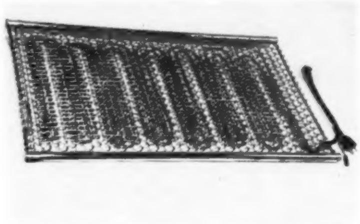
One coat is 10 mils or .010" thick. Three coats, properly applied, reveal no porosities under a 30,000 volt spark test. Thickness of coat and innate hardness result in phenomenal wear.

Colors are brick red, chrome green, iron yellow, gray and black. For further information, write the Carboline Co., 7603 Forsyth Blvd., St. Louis 5, Mo., and ask for Application Data Sheet C-301.

●

Space-Heating Mat

LOCALIZED warming of chilly working areas is accomplished simply by application of the new Snook Dura-Thermal Mat. Combining the features of a wire-coil doormat with a large-area electric element, the heater offers an inexpensive solution to loss of efficiency among uncomfortable workers.



Coils of hard steel wire are wound over a 280-watt, 120-volt metal-encased element, distributed over the 16- by 27-inch mat area in a pattern assuring even, over-all heating. The whole is enclosed in a heavy frame with protective rails of tubular burnished aluminum. This construction is particularly adaptable for underfoot application, since the heated element is held away from the floor and will not even discolor painted surfaces. Also, as the user's feet are supported an equal distance above, free air circulation is maintained.

Electrical service connection is made through a 3-conductor heavy-duty rubber cable which provides a safe ground. The connection at the mat is waterproofed to enable using the unit on wet floors. In use as a floor mat, about 15 per cent of the output is radiant heat and the balance convective. Due to the special design and construction, however, the mat is effective in vertical wall or free-hanging applications as well.

Literature is available on request from the manufacturer.

●

Snow Tire

FOLLOWING an extensive series of tests on both snow and ice by the Pittsburgh Testing Laboratory, a new tire specially designed for winter service or in mud, is announced by James J. Newman, vice-president of The B. F. Goodrich Company, Akron, Ohio.

The new tires stopped the car up to 40 per cent faster on ice, and up to 64 per cent quicker on snow when compared to standard tires with conventional highway treads. They gave up to 20 per cent more traction on ice, and up to 25 per cent more on snow.

When tested against other leading makes designed for similar service the new tires stopped the car from 12 to 14 per cent quicker on ice than the others and from 12 to 33 per cent quicker on snow. The new casing's traction ability on ice was approximately 10 per cent higher, on snow approximately 15 per cent.

These percentages, translated into figures, show that the new tire, operating on snow, stopped the car up to 88 feet sooner on ice and up to 19 feet less on snow than standard highway tires with conventional treads used in the tests, Newman declared.

FLAV-O-LAC FLAKES
THE STANDARD CULTURE FOR FERMENTED MILK PRODUCTS
NET WT 2/3 OZ
DAIRY LABORATORIES

FREE CULTURE MANUAL

A helpful guide in the production of better butter, cheese, buttermilk and sour cream. Send for your FREE copy.

YOGHURT CULTURE

Send for FREE working manual

See our Catalog in Dairy Industries Catalog

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Needs only
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50 word maximum, 50c — 2c for each additional word.

All Other Advertisements

Lightface type: 5c per word ($1.00 minimum).
Boldface type: 10c per word ($2.00 minimum).
(The name and address should be included in counting the words.)

Keyed Address

25c additional in the United States.
50c additional in Foreign Countries.

When replying to any of the following keyed advertisements please address replies to:

BOX NO. .... AMERICAN MILK REVIEW
92 WARREN STREET NEW YORK 7, N. Y.

(The deadline for Classified Advertising is the 10th of the month preceding publication.)

No classified advertising will be accepted to run with borders or special spacing. All such advertisements are considered "Display" advertising and will be billed at regular display advertising rates. (Rates and mechanical requirements on request.)

EQUIPMENT FOR SALE

FOR SALE — No. 172 DeLaval "Air-Tight" Separator; Two Mojonnier Stainless Steel Cabinet Coolers, 8 wings each 72 tubes high; 100 and 200 gallon Round Stainless Steel Pasteurizers, also 100 to 300 gallon Cherry-Burrell S.S. Spray Vat Pasteurizers; 6-18, G-70, G-100, G-160, G-240, GV-20 Cherry-Burrell Fillers; 4, 6, and 8 Wide Bottle Washers. 75 to 1500 gallon Homogenizers or Viscolizers; 1000 and 2000 gallon Pfaudler Glass Lined Storage Tanks; 3 ft. to 6 ft. Stainless Steel (also Copper) Vacuum Pans. Write or wire your requirements. Lester Kehoe Machinery Corp., One East 42nd St., New York 17, N. Y. Telephone—MUrray Hill 2-4616. 11-M

FOR SALE — 190 eight hole wire cases for ½ gallon bottles. One bin feed stoker, with Cissell water level control complete. Reasonable price. The Collinsville Dairy, Collinsville, Illinois. 11-M

FOR SALE — Boilers, high or low pressure, new or used. Also new or used smoke stacks, breechings, boiler tubes, pumps, motors, pipe, valves and fittings. Otto Biefeld Company, Watertown, Wisconsin. 11-M

FOR SALE — 1 Model v-40 Ste-Vac heater, stainless steel, 40,000 lb/hr. 40°-160°F., Complete with pump, relief valve, guages, etc.; 1 Dickerson liquid filler for 16 ounce cans—48 cell.; 1 Dickerson liquid filler for 6 ounce cans—48 cell.; 2 Fort Wayne No. 96 sterilizers, agitating type, 5 HP drive. 16 racks—192 trays per sterilizer, with extra trays and racks. Total capacity 4032 — 303 x 407 cans. R. O. Phillips, WYETH INCORPORATED, Mason, Michigan. 11-M

FOR SALE — Six Valve Specialty Brass Filler; Manton Gaulin 125 gallon homogenizer; 6 foot Chester Cooler, 2 section; 200 gallon Oakes and Burger Pasteurizer and Recorder; 1 Pump; E-19 DeLaval Separator with Clarifier Bowl; Sanitary Fittings; Jalco 12 Bottle Tester with heating element and brake; 10 HP Sellers Automatic Gas Boiler; 4 wide Sturdybilt Washer; 100 quart cases for short squares. All like new and priced right. Vine City Dairy, Inc., Westfield, New York. 11-M

EQUIPMENT FOR SALE

FOR SALE — 4-100, 150, and 200 gallon, stainless steel pasteurizers; Manton-Gaulin Homogenizer; Cabinet Milk Cooler; bottle filler and capper; weigh can and scale; pumps; separators; clarifiers; ice cream freezers; butter churns; can and bottle washers. Many other fine pieces of equipment offered at prices to sell quickly. Tell us what size you need before they are sold. Central Dairy, 943 S. Meridian St., Indianapolis, Indiana. 11-M

FOR SALE — Cabinet Cooler, Jensen, all stainless steel, three leaves, 8000 lb. per hour capacity, city water, direct expansion, like new—$1475.00. R. G. Wright Company, Inc., Roetzer St., Buffalo, New York. 11-M

FOR SALE — 4F Heil washer for immediate delivery. 22 bottles per minute. Pockets needs some repair. $250.00. People's Dairy Inc., 2237 Gay St., Ft. Wayne, Indiana. 11-M-t.f.

SPECIAL OFFERINGS — 500 gallon Pfaudler Stainless Steel "Rotorcoil" Pasteurizing or Processing Vats; 300 gallon Model CGC Manton-Gaulin Homogenizer; 20 H.P. Cyclotherm Steam Generator; 9.9 Kewanee Scotch Marine Boiler and Oil Burner. Write or wire your requirements. Lester Kehoe Machinery Corporation, One East 42nd St., New York 17, N. Y. Telephone—MUrray Hill 2-4616. 11-M

MISCELLANEOUS

REBUILT — Pasteurizers, Milk Coolers, Bottle Fillers, Ice Machines, Plate coolers and heaters. Send us your requirements. Ohio Creamery Supply Company, 701 Woodland Ave., Cleveland 15. 7-M-t.f.

FOR SALE — 50 gross, more or less 56MM round quart milk bottles, some plain. Cuba City Creamery, Cuba City, Wisconsin 10-M-2

FOR SALE — Grape-ade base for making dairy type grape-ade. Nothing to add but water. Mixes one to five. Bradway Chocolate, New Castle, Indiana. 8-M-t.f.

MISCELLANEOUS

FOR SALE — Truck lettering and trademark decals, made for your truck and store advertising. Easy to apply; uniform, distinctive, economical for small or large needs. Write for catalog Mathews Company, 827 South Harvey, Oak Park, Illinois. 8-M-2

FOR SALE—Non Settling Chocolate Syrup and Powder for making chocolate milk. Ask your dairy supply jobber or write us direct. The Bradway Chocolate Company, New Castle, Indiana. 8-M-t.f.

FOR SALE—18 retail milk trucks, 1947 models in excellent condition. 10 Dodge and 8 Delivr-alls. Write White Dairy Company, 621 So. 27th St., Birmingham 5, Alabama. 11-M

FOR SALE — Dairy Orange-ade base made from fresh oranges. Ready to use, add nothing but water. $1.35 per No. 10 tin. The Bradway Chocolate Company, New Castle, Indiana. 8-M-t.f.

BUSINESS OPPORTUNITY

FOR SALE — A dairy that is well established doing a nice volume. $200,000 annual sales, paper and glass operation. Will stand rigid inspection. A rare opportunity to have a business that will bring such a good return on investment. Equipment in good shape with a nice supply of milk, all Grade A. Terms can be arranged. Reply Box 50, care this publication. 12 M

FOR SALE — Grade A milk processing and distributing plant in booming Oregon city. Good Volume, excellent location. Good modern trucks and equipment including Pure-Pak paper filler and homogenizer. Plant capable of filling 4800 units per hour. Conveyor system, all stainless steel equipment. Price $65,000 with real estate, $45,000 without. Terms. Reply Box 53, care this publication. 11-M

FOR SALE — Small milk plant located in Northeast Louisiana. Two wholesale and one retail route. 350 gallons daily. Real estate optional. Reply Box 54, care this publication. 11-M

FOR SALE — Valuable Milk Bottling Plant and Cheese factory, fully equipped, owner operated. Capacity 10,000 qts. milk, 25,000 lb. cheese. Located eastern Pennsylvania. Write Box 124, East Greenville, Pa. 11-M

FOR SALE — Modern Milk Plant 45 x 125 fully equipped with modern machinery. Located in the Pittsburgh, Pa., district. Reply Box 56, care this publication. 11-M

FOR SALE — Modern Milk Plant, Northern New York. Doing $125,000 a year. Surrounding population 40,000. Retail Licenses in all areas. Owner has other interests. Reply Box 57, care this publication. 11-M

FOR SALE — General dairy business with dairy bar, well established. New Building, good equipment, Southern Michigan. Reply Box 58, care this publication. 11-M

BUSINESS OPPORTUNITY

FOR SALE — Almost new modern dairy plant; in Eastern Colorado. Located corner two highways. Only dairy in town of 220 in good agricultural district. Home included. Reply Box 60, care this publication. 11-M

CHEESE OPERATION SPACE AVAILABLE — Milk Plant located 180 south of Chicago has space for lease for manufacturing of any type of cheese. Equipped with two 10,000 lb. stainless steel vats, electric agitator forkers, continuous pasteurization, paraffin tank, etc. High and Low temperature storage. 40,000 lbs. whole or skim milk a day if wanted. Write owner, Box 51, care this publication. 12-M

EXCELLENT OPPORTUNITY — Modern large milk plant in progressive central New York area. Several wholesale and retail routes. Equipment in top condition. Supply and demand of products exceptional. Established 28 years. Confidential inquiries exchanged. Reply Box 61, care this publication. 12-M

WANTED TO BUY

We are interested in purchasing two hundred (200) gross clean used two quart glass containers with No. 2 cap seat. Advise price and how packed for shipment by rail to Newark, New Jersey. Write Export Department, Mutual Milk Bottle Exchange, Inc., 25 Fourth Ave., Newark 4, New Jersey. We buy all sizes used bottle and cases. 11-M

THERMOMETER REPAIR

We repair Mercurial Indicating Thermometers, dial thermometers and recording thermometers of all makes. Instruments are reconditioned like new. Satisfaction guaranteed. For economical savings, ship your thermometers to Nurnberg Thermometer Company, 124 Livingston St., Brooklyn, New York. 8-M-t.f.

HELP WANTED

WANTED SALESMAN — Sell Bradway non-settling chocolate dairy powder and syrup for making chocolate milk drink. Write the Bradway Chocolate Company, New Castle, Indiana. 11-M-2

HELP WANTED — Man to head laboratory of company's main dairy plant. Should be graduate dairy chemist and familiar with laboratory problems and technique where milk powder, cream, butter, ice cream, etc. are processed. Reply Box 55, care this publication. 11-M

SALESMEN: Commission Basis. JOBBERS: Exclusive Territory. Nationally known stainless steel manufacturer of dairy storage, cooling and transportation tanks as well as a complete line of processing and storage equipment for other industries has several desirab'e positions open. Apply with complete information to Box 79, care this publication. 11-M

OPPORTUNITY — We are seeking several representatives to set-up dealerships for milk coolers. Monthly repeat business from ten good accounts will assure high financial return. Write Star Pump and Cooler Corp., 1220 No. 15th St., St. Louis, Mo. See our advertisement in this issue. 11-M

POSITION WANTED

POSITION WANTED — Assistant Sales Promotion Manager of very large dairy desires to buy into small or medium sized growing milk company in East or South; or will consider employment on a profit sharing basis. Reply Box 52, care this publication. 11-M

SUPPORTS MUST GO

Speakers at Milk Producers Convention See Defense Program As Big Factor

THE PRESENT domestic situation is a challenge to the dairy industry to set about correcting its own ills, declared Stanley Andrews, director of the office of foreign agricultural relations, U. S. Department of Agriculture, who spoke at the 34th annual convention of the National Milk Producers Federation, in November.

"Viewed from the standpoint of its statistical position, the industry looks pretty sad," he commented. "The government, stepping in with its support programs to stabilize the industry, finds itself with an increasing supply of dairy products and, increasingly, also the main market for a lot of butter, dried milk and cheese.

"This is not only an intolerable situation for the government; it is a situation which, if not corrected in some way, may eventually destroy the industry.

* * *

Although national defense may be the greatest factor affecting the dairy industry next year, most of its peace time problems will still be with it, reminded Preston Richards, director of the U. S. Department of Agriculture dairy branch.

Dairy farmers, he said, have a common interest in programs: (1) to help assure a reasonable level of returns for milk and dairy products; (2) to develop markets and encourage consumption, and; (3) that will not invite and create widespread public criticism.

"On the producers organization," said Mr. Richards, "rests a large share of the responsibility for conceiving and recommending appropriate legislation and programs which will provide for adequate dairy price supports by workable support methods, and for orderly pricing in fluid milk markets. This is an important responsibility affiecting the returns from milk and butterfat produced and sold throughout the Nation, by 2½ million dairy farmers."

Mr. Richards predicted: (1) An increased demand for dairy products next year; (2) Only moderate price increases; (3) No price ceilings on dairy products in the immediate future; and (4) Prospects somewhat brighter in disposals from government butter stocks.

* * *

The reshuffling that the dairy industry underwent in World War II will stand it in good stead for whatever may be demanded by defense production and international developments, according to Russell S. Waltz, Seattle, Wash., general manager of United Dairymen's Association.

"We are starting the rearmament program with a dairy plant that is in much stronger condition than it was at the start of the last war," Mr. Waltz declared.

Mr. Waltz predicted that the rearmament program can have no other effect than increasing demand and strengthening price structures for fluid milk.

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